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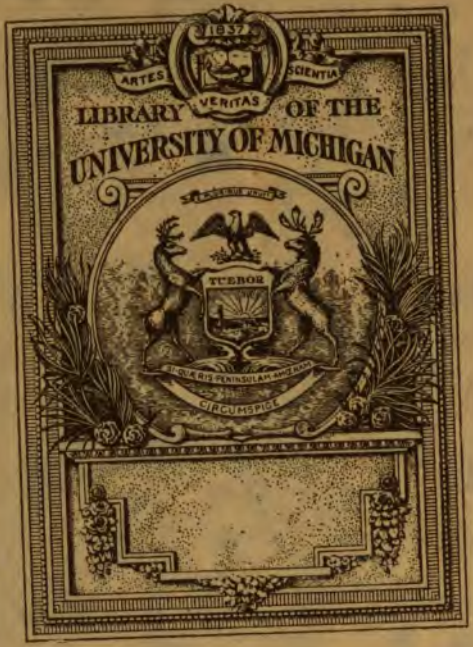

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TABLES

KÉPLÉRIENNES

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TABLES

du

MOUVEMENT KÉPLÉRIEN

PAR

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INTRODUCTION

et

USAGE DES TABLES

1 — Soit dans une orbite képlérienne elliptique
v, l'anomalie vraie,
M, l'anomalie moyenne,
r, le rayon vecteur,
e, l'excentricité,
a, le demi-grand axe;
les présentes Tables donnent, pour chaque valeur de l'anomalie vraie v, variant de degré en degré depuis 0° jusqu'à 180°, et pour chaque valeur de l'excentricité e, variant de centième en centième depuis 0,00 jusqu'à 0,49, les valeurs correspondantes de l'anomalie moyenne M, et du logarithme décimal du rapport $\frac{r}{a}$.

Les valeurs de M ont été calculées au cent-millième de degré près, et celles de $\log \frac{r}{a}$ avec sept décimales, comme il sera dit plus loin; elles ont été réduites ensuite à trois et à cinq décimales respectivement, suivant la règle ordinaire, les angles étant toujours exprimés en degrés et parties décimales de degré. Toutefois, afin de permettre une appréciation plus exacte de l'erreur ainsi commise, on a fait suivre les nombres de la Table d'un petit signe +, toutes les fois qu'ils sont par défaut, et que les deux chiffres qui viennent après ceux qui sont écrits forment un nombre compris entre 20 et 49, limites comprises; et de même, on a fait usage d'un petit signe − toutes les fois que les nombres écrits sont par excès, les deux chiffres supprimés dans le résultat direct du calcul formant un nombre compris entre 50 et 79, limites comprises. Il convient d'ajouter, pour préciser, qu'il paraît vraisemblable que le calcul primitif ne comporte pas d'erreurs supérieures à cinq unités du dernier ordre décimal, cette limite étant d'ailleurs rarement atteinte.

Chaque nombre de la Table est accompagné de deux autres désignés par D et D': ce sont les *différences* correspondantes par rapport aux deux variables v et e respectivement. Si $f(v, e)$ désigne

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la fonction M ou $\log \frac{r}{a}$, on a

$$f(v+1^\circ, e) - f(v, e) = D, \; f(v, e+0,01) - f(v, e) = D'.$$

Les différences secondes correspondantes se forment à vue; nous appellerons d, la différence de D par rapport à v,

d', la différence de D' par rapport à e,

d'', la différence de D par rapport à e, égale à la différence de D' par rapport à v.

2 — D'après les conseils de M. H. Andoyer les calculs ont été effectués par quadratures mécaniques en déterminant directement les valeurs des dérivées par rapport à v des fonctions inconnues M et $\log \frac{r}{a}$. L'unité d'angle étant le degré, R_0 désignant la valeur du radian en degrés, et k le module des logarithmes décimaux, il suffit d'écrire les formules connues

$$\frac{\partial M}{\partial v} = \frac{(1-e^2)^{\frac{3}{2}}}{e^2} \times \frac{1}{\left(\frac{1}{e} + \cos v\right)^2}, \quad \frac{\partial \left(\log \frac{r}{a}\right)}{\partial v} = \frac{k}{R_0} \times \frac{\sin v}{\frac{1}{e} + \cos v},$$

pour s'apercevoir que si l'on donne à e une valeur constante, rien ne sera plus simple que de calculer $\frac{\partial M}{\partial v}$ et $\frac{\partial \left(\log \frac{r}{a}\right)}{\partial v}$, pour toutes les valeurs de v moyennes entre deux arguments successifs de la Table, savoir 0°,5, 1°,5, 2°,5, . . . , 179°,5.

Si d'autre part on détermine directement les inconnues pour $v = 0°, 45°, 90°, 135°, 180°$, il n'y aura plus qu'à former les tableaux d'intégration en partant de ces valeurs initiales, d'après la formule classique

$$\frac{1}{\omega} \int_{a-\frac{\omega}{2}}^{a+i\omega+\frac{\omega}{2}} f(x)\,dx = {}^1f\left(a+i\omega+\frac{\omega}{2}\right) + \frac{1}{24} f^1\left(a+i\omega+\frac{\omega}{2}\right)$$

$$- \frac{17}{5760} f^3\left(a+i\omega+\frac{\omega}{2}\right) + \ldots,$$

(voir, par exemple, **Tisserand**, *Traité de Mécanique céleste*, Tome IV, p. 181), dont le dernier terme est toujours insensible ici. Ces tableaux seront étendus aux valeurs croissantes et décrois-

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sante de v jusqu'à leur raccordement pour $v = 22°$ et $23°$, $v = 67°$ et $68°$, ...

L'exactitude de ces raccordements fournit une preuve pour ainsi dire absolue de celle de l'ensemble du calcul.

3 — L'usage de la Table repose sur les formules fondamentales suivantes. Soit f la fonction M ou $\log \frac{r}{a}$, et désignons comme plus haut par D, D', d, d', d'' ses différences premières et secondes, exprimées en degrés, ou en unités de la cinquième décimale, suivant qu'il s'agit de M ou de $\log \frac{r}{a}$. Donnons à v et à e des accroissements h et h', rapportés respectivement au degré ou au centième comme unité, et soit Δf l'accroissement correspondant de la fonction f, exprimé avec la même unité que les différences D, D'. . . .

Soient ε, ε' les corrections toujours très petites et souvent négligeables

$$\varepsilon = \frac{h(h-1)}{2} d, \quad \varepsilon' = \frac{h'(h'-1)}{2} d',$$

fournies à vue par la Table auxiliaire de la page 203, à la fin du volume; on a

$$(1) \qquad \Delta f = h(D + h' d'') + h' D' + \varepsilon + \varepsilon',$$

d'où l'on tire

$$(2) \qquad h = \frac{\Delta f - h' D' - \varepsilon - \varepsilon'}{D + h' d''},$$

la correction ε étant calculée, s'il y a lieu, après une première approximation rapide pour h.

Enfin, en conservant toujours les mêmes unités, on a

$$(3) \qquad \frac{\partial f(v+h, e+h')}{\partial v} = D + \left(h - \frac{1}{2}\right) d + h' d'',$$

$$(4) \qquad \frac{\partial f(v+h, e+h')}{\partial e} = D' + \left(h' - \frac{1}{2}\right) d' + h d''.$$

L'exactitude de ces formules d'interpolation résulte de ce que les différences troisièmes sont toutes négligeables.

4 — Il suffit maintenant de montrer par des exemples comment on peut employer la Table et les formules précédentes pour résoudre rapidement le problème qui se présente le plus fréquemment dans l'étude du mouvement des planètes.

Exemple I — On donne

$e = 0,1953329$, $\log a = 0,3881319$, $M = 110° 0' 37'',35$;

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calculer v et $\log r$.

La Table auxiliaire de la page 202, pour la conversion des minutes et des secondes en millièmes de degré, donne d'abord $M = 110°,010$; et il en résulte que l'on a 129° pour valeur approchée de v.

Pour $v = 129°$, $e = 0,19$, on a

$$M = 110°,499,\quad D = +1,224,\quad d = +0,008$$
$$d'' = +0,011;$$
$$D' = -1,066,\ d' = -0,008,$$

on a aussi, dans le cas actuel $\Delta M = -0,489$, $h' = +0,533$; on trouve alors

$$\begin{aligned} -h'D' &= +0,568 \\ -\varepsilon &= 0 \\ -\varepsilon' &= -1 \end{aligned} \qquad D + h'd'' = +1,230,$$

et par suite

$$h = \frac{0,078}{1,230} = 0,063;$$

donc

$$v = 129°,063 = 129°\,3'\,47'',$$

à quelques secondes près.

Pour $v = 129°$, $e = 0,19$, on a encore

$$\log\frac{r}{a} = 0,03934,\quad D = +126,\quad d = -1,$$
$$d'' = +8$$
$$D' = +135,\quad d' = -7,$$
$$h = +0,063,\quad h' = +0,533;$$

on trouve alors

$$D + h'd'' = +130;\quad \begin{aligned} h(D + h'd'') &= +8 \\ h'D' &= +72 \\ \varepsilon &= 0 \\ \varepsilon' &= +1 \end{aligned}$$

$$\log\frac{r}{a} = 0,04015,$$

et finalement

$$\log r = 0,42828.$$

Si l'approximation ainsi obtenue n'est pas jugée suffisante, et si l'on veut faire un calcul exact avec des tables à sept décimales, on partira de la valeur approchée de v obtenue ci-dessus, ou plutôt de cette valeur arrondie de façon à former un multiple de dix secondes, soit 129° 3′ 50″.

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Les formules connues

$$\frac{r}{a}=\frac{\cos^2\varphi}{1+e\cos v},\ \sin\frac{v-u}{2}=\sin\frac{\varphi}{2}\,\text{séc}\,\varphi\sin v\sqrt{\frac{r}{a}},\ M=u-e\sin u,$$

où l'on a fait $\sin\varphi=e$, et où u désigne l'anomalie excentrique, donnent successivement alors

$$\log r=0,4282851,\quad u=119°43'44'',02,\quad M=110°0'36'',67.$$

Il faut parsuite donner à v une correction dv telle que la correction correspondante dM de M soit $+0'',68$; or la formule (3) donne ici,

$$\frac{dM}{dv}=1,226;$$

donc

$$dv=\frac{0'',68}{1,226}=0'',56,$$

et l'on a aussi exactement que possible

$$v=129°3'50'',56.$$

La formule (3) donne encore ici

$$\frac{d\log\left(\frac{r}{a}\right)}{dv}=130;$$

par suite, en exprimant maintenant la correction de $\log r$ en unités de la septième décimale, on a

$$d(\log r)=130\times\frac{0,56}{36}=2,$$

de sorte que finalement

$$\log r=0,4282853.$$

Généralement, on voit que les formules (3) et (4) permettent le calcul des dérivées partielles de deux quelconques des quantités v, M, r, e considérées comme fonctions des deux autres.

Exemple II — On donne $e=0,48672$, $M=143°,762$; calculer v et $\log\frac{r}{a}$.

Une valeur approchée de v est 165°. Pour $v=165°$, $e=0,48$, on a

$$M=143°,313,\quad D=+2,356,\quad d=+0,018,\quad d''=+0,042$$

$$D'=-0,703,\quad d'=-0,017,$$

$$\Delta M=+0,449,\quad h'=+0,672$$

$$-h'D'=+0,472$$

$$-\varepsilon=+\quad 2\qquad D+h'd''=+2,384$$

$$-\varepsilon'=-\quad 2$$

$$h=\frac{0,921}{2,384}=0,386,$$

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de sorte que

$$v = 165°,386.$$

Pour $v = 165°$, $e = 0,48$, on a aussi

$$\log \frac{r}{a} = 0,15681, \quad D = +170, \quad d = -10,$$

$$d'' = +7,$$

$$D' = +239, \quad d' = -5,$$

et, par suite, on trouve

$$\log \frac{r}{a} = 0,15911.$$

Les opérations seront encore plus simples quand on pourra se contenter de l'approximation d'un calcul à quatre décimales et au centième de degré près.

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I

TABLES

POUR LE CALCUL DES ANOMALIES

et

DU RAYON VECTEUR

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	$e = 0{,}00$			$e = 0{,}01$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+1,000	−0,000	0,000	+0,980	−0,000
1	1,000	000	020	0,980	980	019
2	2,000	000	040	1,960+	980	039
3	3,000	000	060	2,940+	981	058
4	4,000	000	079	3,921−	980	079
5	5,000	+1,000	−0,099	4,901	+0,980	−0,098
6	6,000	000	119	5,881	980	117
7	7,000	000	139	6,861+	981	136
8	8,000	000	158	7,842−	980	156
9	9,000	000	178	8,822	980	175
10	10,000	+1,000	−0,198	9,802+	+0,981	−0,194
11	11,000	000	217	10,783	981	214
12	12,000	000	236	11,764−	980	234
13	13,000	000	256	12,744	981	252
14	14,000	000	275	13,725	981	271
15	15,000	+1,000	−0,294	14,706−	+0,980	−0,291
16	16,000	000	314	15,686+	981	309
17	17,000	000	333	16,667+	981	328
18	18,000	000	352	17,648+	982	346
19	19,000	000	370	18,630−	981	366
20	20,000	+1,000	−0,389	19,611	+0,981	−0,384
21	21,000	000	408	20,592+	982	402
22	22,000	000	426	21,574−	981	421
23	23,000	000	445	22,555+	982	438
24	24,000	000	463	23,537	982	457
25	25,000	+1,000	−0,481	24,519	+0,982	−0,475
26	26,000	000	499	25,501	982	492
27	27,000	000	517	26,483	983	510
28	28,000	000	534	27,466−	982	528
29	29,000	000	552	28,448	982	545
30	30,000	+1,000	−0,570	29,430−	+0,984	−0,561
31	31,000	000	586	30,414−	983	579
32	32,000	000	603	31,397−	983	596
33	33,000	000	620	32,380−	983	613
34	34,000	000	637	33,363	984	629
35	35,000	+1,000	−0,653	34,347−	+0,984	−0,646
36	36,000	000	669	35,331−	983	662
37	37,000	000	686	36,314+	985	677
38	38,000	000	701	37,299−	984	693
39	39,000	000	717	38,283	984	709
40	40,000	+1,000	−0,733	39,267−	+0,985	−0,723
41	41,000	000	748	40,252+	985	739
42	42,000	000	763	41,237+	986	754
43	43,000	000	777	42,223−	985	769
44	44,000	000	792	43,208+	986	783
45	45,000	+1,000	−0,806	44,194	+0,986	−0,797

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	$e = 0{,}00$			$e = 0{,}01$			
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$		D	D'
0°	0,00000	0	−436	$\bar{1}$,99564−		0	−441
1	00000	0	436	99564−		0	441
2	00000	0	436	99564−		0	441
3	00000	0	436	99564	+	1	440
4	00000	0	435	99565−		0	440
5	0,00000	0	−435	$\bar{1}$,99565	+	1	−439
6	00000	0	434	99566		1	439
7	00000	0	433	99567−		1	438
8	00000	0	432	99568−		1	437
9	00000	0	431	99569		1	436
10	0,00000	0	−430	$\bar{1}$,99570	+	1	−434
11	00000	0	429	99571+		2	433
12	00000	0	427	99573		2	432
13	00000	0	425	99575−		1	431
14	00000	0	424	99576+		2	428
15	0,00000	0	−422	$\bar{1}$,99578	+	2	−426
16	00000	0	420	99580+		2	424
17	00000	0	418	95582+		3	422
18	00000	0	415	99585−		2	421
19	00000	0	413	99587		2	418
20	0,00000	0	−411	$\bar{1}$,99589+	+	3	−415
21	00000	0	408	99592		3	413
22	00000	0	405	99595		3	410
23	00000	0	402	99598		3	408
24	00000	0	399	99601−		3	405
25	0,00000	0	−396	$\bar{1}$,99604	+	3	−402
26	00000	0	393	99607		3	398
27	00000	0	390	99610+		4	394
28	00000	0	386	99614		3	392
29	00000	0	383	99617+		4	387
30	0,00000	0	−379	$\bar{1}$,99621	+	4	−384
31	00000	0	375	99625		4	381
32	00000	0	371	99629		4	377
33	00000	0	367	99633		4	373
34	00000	0	363	99737		4	369
35	0,00000	0	−359	$\bar{1}$,99641+	+	5	−364
36	00000	0	354	99646−		4	360
37	00000	0	350	99650		5	356
38	00000	0	345	99655−		4	352
39	00000	0	341	99659+		5	346
40	0,00000	0	−336	$\bar{1}$,99664+	+	5	−342
41	00000	0	331	99669		5	337
42	00000	0	326	99674		5	332
43	00000	0	321	99679		5	327
44	00000	0	316	99684+		6	322
45	0,00000	0	−310	$\bar{1}$,99690−	+	5	−317

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	$e = 0{,}00$			$e = 0{,}01$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
45	45,000	+1,000	−0,806	44,194	+0,986	−0,797
46	46,000	000	820	45,180	986	812
47	47,000	000	834	46,166+	987	825
48	48,000	000	847	47,153−	986	839
49	49,000	000	861	48,139+	987	852
50	50,000	+1,000	−0,874	49,126+	+0,988	−0,865
51	51,000	000	886	50,114−	987	878
52	52,000	000	899	51,101	988	890
53	53,000	000	911	52,089	988	903
54	54,000	000	923	53,077	988	915
55	55,000	+1,000	−0,935	54,065+	+0,989	−0,926
56	56,000	000	946	55,054	989	938
57	57,000	000	957	56,043	989	949
58	58,000	000	968	57,032	990	960
59	59,000	000	978	58,022−	989	971
60	60,000	+1,000	−0,989	59,011+	+0,990	−0,981
61	61,000	000	0,999	60,001+	991	0,991
62	62,000	000	1,008	60,992	990	1,001
63	63,000	000	018	61,982+	991	010
64	64,000	000	027	62,973+	992	019
65	65,000	+1,000	−1,035	63,965−	+0,991	−1,029
66	66,000	000	044	64,956+	992	037
67	67,000	000	052	65,948+	993	045
68	68,000	000	059	66,941−	992	054
69	69,000	000	067	67,933	993	061
70	70,000	+1,000	−1,074	68,926	+0,993	−1,068
71	71,000	000	081	69,919	994	075
72	72,000	000	087	70,913−	994	082
73	73,000	000	093	71,907−	994	089
74	74,000	000	099	72,901−	994	095
75	75,000	+1,000	−1,105	73,895+	+0,995	−1,100
76	76,000	000	110	74,890	995	106
77	77,000	000	115	75,885+	996	110
78	78,000	000	119	76,881	996	116
79	79,000	000	123	77,877−	996	120
80	80,000	+1,000	−1,127	78,873	+0,997	−1,124
81	81,000	000	130	79,870−	996	128
82	82,000	000	134	80,866+	998	131
83	83,000	000	136	81,864−	997	134
84	84,000	000	139	82,861+	998	137
85	85,000	+1,000	−1,141	83,859+	+0,998	−1,139
86	86,000	000	143	84,857+	999	141
87	87,000	000	144	85,856	999	143
88	88,000	000	145	86,855	999	144
89	89,000	000	146	87,854+	+1,000	145
90	90,000	+1,000	−1,146	88,854	+1,000	−1,146

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	$e = 0{,}00$			$e = 0{,}01$			
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$		D	D'
45°	0,00000	0	−310	$\bar{1}$,99690−	+	5	−317
46	00000	0	305	99695		5	312
47	00000	0	300	99700+		6	306
48	00000	0	294	99706		6	301
49	00000	0	288	99712−		5	296
50	0,00000	0	−283	$\bar{1}$,99717+	+	6	−289
51	00000	0	277	99723+		6	284
52	00000	0	271	99729		6	278
53	00000	0	265	99735		6	272
54	00000	0	259	99741		6	266
55	0,00000	0	−253	$\bar{1}$,99747+	+	7	−260
56	00000	0	246	99754−		6	254
57	00000	0	240	99760−		6	248
58	00000	0	234	99766		7	241
59	00000	0	227	99773−		6	235
60	0,00000	0	−221	$\bar{1}$,99779	+	7	−229
61	00000	0	214	99786−		6	222
62	00000	0	208	99792+		7	215
63	00000	0	201	99799		7	209
64	00000	0	194	99806−		6	202
65	0,00000	0	−188	$\bar{1}$,99812+	+	7	−195
66	00000	0	181	99819+		7	188
67	00000	0	174	99826+		7	181
68	00000	0	167	99833+		7	175
69	00000	0	160	99840+		7	168
70	0,00000	0	−153	$\bar{1}$,99847+	+	7	−160
71	00000	0	146	99854+		8	153
72	00000	0	138	99862−		7	147
73	00000	0	131	99869		7	140
74	00000	0	124	99876		7	132
75	0,00000	0	−117	$\bar{1}$,99883+	+	8	−125
76	00000	0	109	99891−		7	118
77	00000	0	102	99898		7	110
78	00000	0	95	99905+		8	103
79	00000	0	87	99913		7	96
80	0,00000	0	− 80	$\bar{1}$,99920+	+	8	− 88
81	00000	0	72	99928−		7	81
82	00000	0	65	99935+		8	73
83	00000	0	57	99943−		7	66
84	00000	0	50	99950+		8	58
85	0,00000	0	− 42	$\bar{1}$,99958	+	7	− 51
86	00000	0	35	99965+		8	43
87	00000	0	27	99973		8	36
88	00000	0	19	99981−		7	29
89	00000	0	12	99988		8	21
90	0,00000	0	− 4	$\bar{1}$,99996−	+	7	− 13

Digitized by Google

	e = 0,00			e = 0,01		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
90	90,000	+1,000	−1,146	88,854	+1,000	−1,146
91	91,000	000	146	89,854	000	146
92	92,000	000	146	90,854+	001	145
93	93,000	000	145	91,855+	001	145
94	94,000	000	144	92,856+	002	144
95	95,000	+1,000	−1,142	93,858−	+1,001	−1,144
96	96,000	000	141	94,859+	003	142
97	97,000	000	138	95,862−	002	141
98	98,000	000	136	96,864	003	138
99	99,000	000	133	97,867	003	136
100	100,000	+1,000	−1,130	98,870	+1,004	−1,133
101	101,000	000	126	99,874−	003	130
102	102,000	000	123	100,877+	005	126
103	103,000	000	118	101,882−	004	123
104	104,000	000	114	102,886	005	118
105	105,000	+1,000	−1,109	103,891	+1,005	−1,113
106	106,000	000	140	104,896+	006	108
107	107,000	000	098	105,902−	006	103
108	108,000	000	092	106,908−	006	098
109	109,000	000	086	107,914	006	091
110	110,000	+1,000	−1,080	108,920+	+1,007	−1,085
111	111,000	000	073	109,927+	008	078
112	112,000	000	065	110,935−	007	072
113	113,000	000	058	111,942	008	064
114	114,000	000	050	112,950	008	056
115	115,000	+1,000	−1,042	113,958	+1,009	−1,048
116	116,000	000	033	114,967−	009	040
117	117,000	000	024	115,976−	009	032
118	118,000	000	015	116,985−	009	023
119	119,000	000	1,006	117,994	010	013
120	120,000	+1,000	−0,996	119,004	+1,010	−1,004
121	121,000	000	986	120,014	010	0,994
122	122,000	000	976	121,024	011	983
123	123,000	000	965	122,035	011	973
124	124,000	000	954	123,046	011	962
125	125,000	+1,000	−0,943	124,057+	+1,012	−0,951
126	126,000	000	931	125,069	012	940
127	127,000	000	919	126,081−	012	928
128	128,000	000	907	127,093	012	916
129	129,000	000	895	128,105+	013	903
130	130,000	+1,000	−0,882	129,118	+1,013	−0,891
131	131,000	000	869	130,131	013	878
132	132,000	000	856	131,144	014	864
133	133,000	000	842	132,158−	013	851
134	134,000	000	829	133,171+	014	837
135	135,000	+1,000	−0,815	134,185+	+1,015	−0,823

Digitized by Google

	$e = 0{,}00$			$e = 0{,}01$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	0,00000	0	− 4	$\bar{1}$,99996−	+ 7	− 13
91	00000	0	+ 3	0,00003+	8	− 5
92	00000	0	11	00011	7	+ 2
93	00000	0	18	00018+	8	10
94	00000	0	26	00026	8	17
95	0,00000	0	+ 34	0,00034−	+ 7	+24
96	00000	0	41	00041	8	33
97	00000	0	49	00049−	7	39
98	00000	0	56	00056	8	48
99	00000	0	64	00064−	7	55
100	0,00000	0	+ 71	0,00071	+ 8	+ 63
101	00000	0	79	00079−	7	70
102	00000	0	86	00086	7	77
103	00000	0	93	00093+	8	85
104	00000	0	101	00101	7	92
105	0,00000	0	+108	0,00108+	+ 8	+100
106	00000	0	116	00116−	7	107
107	00000	0	123	00123	7	114
108	00000	0	130	00130	7	122
109	00000	0	137	00137+	7	129
110	0,00000	0	+144	0,00144+	+ 8	+137
111	00000	0	152	00152−	7	143
112	00000	0	159	00159−	7	150
113	00000	0	166	00166−	7	157
114	00000	0	173	00173−	7	164
115	0,00000	0	+180	0,00180−	+ 6	+171
116	00000	0	186	00186+	7	179
117	00000	0	193	00193+	7	185
118	00000	0	200	00200	7	192
119	00000	0	207	00207−	6	199
120	0,00000	0	+213	0,00213+	+ 7	+206
121	00000	0	220	00220	6	212
122	00000	0	226	00226+	7	219
123	00000	0	233	00233	6	225
124	00000	0	239	00239+	6	232
125	0,00000	0	+245	0,00245+	+ 7	+238
126	00000	0	252	00252−	6	244
127	00000	0	258	00258	6	251
128	00000	0	264	00264	6	257
129	00000	0	270	00270	6	263
130	0,00000	0	+276	0,00276−	+ 6	+269
131	00000	0	282	00282−	5	274
132	00000	0	287	00287+	6	281
133	00000	0	293	00293	5	286
134	00000	0	298	00298+	6	292
135	0,00000	0	+304	0,00304	+ 5	+297

Digitized by Google

	e = 0,00			e = 0,01		
v	M	D	D'	M	D	D'
135°	135°,000	+1°,000	−0°,815	134°,185+	+1°,015	−0°,823
136	136,000	000	800	135,200−	014	809
137	137,000	000	786	136,214	015	794
138	138,000	000	771	137,229	015	780
139	139,000	000	756	138,244	015	765
140	140,000	+1,000	−0,741	139,259	+016	−0,749
141	141,000	000	725	140,275−	015	734
142	142,000	000	710	141,290+	016	718
143	143,000	000	694	142,306+	016	702
144	144,000	000	678	143,322+	017	686
145	145,000	+1,000	−0,661	144,339−	+0,016	−0,670
146	146,000	000	645	145,355+	017	653
147	147,000	000	628	146,372	017	636
148	148,000	000	611	147,389	017	619
149	149,000	000	594	148,406	017	602
150	150,000	+1,000	−0,577	149,423+	+0,018	−0,584
151	151,000	000	559	150,441	017	567
152	152,000	000	542	151,458+	018	548
153	153,000	000	524	152,476+	018	530
154	154,000	000	506	153,494+	018	512
155	155,000	+1,000	−0,488	154,512+	+1,019	−0,494
156	156,000	000	469	155,531−	018	476
157	157,000	000	451	156,549	019	457
158	158,000	000	432	157,568−	018	439
159	159,000	000	414	158,586+	019	419
160	160,000	+1,000	−0,395	159,605+	+1,019	−0,400
161	161,000	000	376	160,624+	019	381
162	162,000	000	357	161,643+	020	361
163	163,000	000	337	162,663−	019	343
164	164,000	000	318	163,682	019	323
165	165,000	+1,000	−0,299	164,701+	+1,020	−0,303
166	166,000	000	279	165,721−	019	284
167	167,000	000	260	166,740+	020	263
168	168,000	000	240	167,760	020	244
169	169,000	000	220	168,780−	020	224
170	170,000	+1,000	−0,200	169,800−	+1,019	−0,204
171	171,000	000	181	170,819+	020	183
172	172,000	000	161	171,839+	020	163
173	173,000	000	141	172,859+	020	143
174	174,000	000	121	173,879+	020	122
175	175,000	+1,000	−0,101	174,899+	+1,020	−0,102
176	176,000	000	081	175,919+	021	081
177	177,000	000	060	176,940−	020	062
178	178,000	000	040	177,960−	020	041
179	179,000	000	020	178,980	020	021
180	180,000	+1,000	−0,000	180,000	+1,020	−0,000

Digitized by Google

	$e = 0{,}00$			$e = 0{,}01$			
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$		D	D'
135°	0,00000	0	+304	0,00304	+	5	+297
136	00000	0	309	00309+		5	303
137	00000	0	314	00314+		6	309
138	00000	0	320	00320−		5	313
139	00000	0	325	00325−		5	318
140	0,00000	0	+330	0,00330−	+	5	+323
141	00000	0	335	00335−		4	328
142	00000	0	339	00339+		5	334
143	00000	0	344	00344		4	338
144	00000	0	348	00348+		5	343
145	0,00000	0	+353	0,00353	+	4	+347
146	00000	0	357	00357+		4	352
147	00000	0	361	00361+		5	356
148	00000	0	366	00366−		4	360
149	00000	0	370	00370−		3	364
150	0,00000	0	+373	0,00373+	+	4	+368
151	00000	0	377	00377		4	372
152	00000	0	381	00381		3	375
153	00000	0	384	00384+		4	380
154	00000	0	388	00388−		3	383
155	0,00000	0	+391	0,00391	+	3	+386
156	00000	0	394	00394+		3	389
157	00000	0	397	00397+		3	393
158	00000	0	400	00400+		3	396
159	00000	0	403	00403		3	398
160	0,00000	0	+406	0,00406−	+	2	+401
161	00000	0	408	00408+		3	404
162	00000	0	411	00411−		2	406
163	00000	0	413	00413		2	408
164	00000	0	415	00415		2	411
165	0,00000	0	+417	0,00417	+	2	+413
166	00000	0	419	00419		2	415
167	00000	0	421	00421		2	416
168	00000	0	423	00423−		1	418
169	00000	0	424	00424		1	420
170	0,00000	0	+425	0,00425+	+	2	+422
171	00000	0	427	00427−		1	422
172	00000	0	428	00428		1	423
173	00000	0	429	00429		1	424
174	00000	0	430	00430−		1	425
175	0,00000	0	+431	0,00431+	+	0	+426
176	00000	0	431	00431		1	427
177	00000	0	432	00432−		0	427
178	00000	0	432	00432		0	427
179	00000	0	432	00432		0	428
180	0,00000	0	+432	0,00432	+	0	+428

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	$e = 0{,}02$			$e = 0{,}03$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+0,961	−0,000	0,000	+0,941	−0,000
1	0,961 −	960	020	0,941 +	942	019
2	1,921	961	038	1,883 −	941	038
3	2,882	960	058	2,824	941	057
4	3,842 +	961	077	3,765 +	942	075
5	4,803	+0,961	−0,096	4,707	+0,942	−0,095
6	5,764	961	115	5,649 −	941	114
7	6,725 −	961	135	6,590 +	942	132
8	7,686 −	961	154	7,532	942	151
9	8,647 −	961	173	8,474	942	170
10	9,608	+0,961	−0,192	9,416	+0,942	−0,189
11	10,569	961	211	10,358 +	943	207
12	11,530 +	962	229	11,301 −	942	227
13	12,492	962	249	12,243 +	943	245
14	13,454 −	961	268	13,186	943	263
15	14,415 +	+0,962	−0,286	14,129 +	+0,944	−0,282
16	15,377 +	962	304	15,073 −	943	301
17	16,339 +	963	323	16,016	944	319
18	17,302 −	962	342	16,960	944	337
19	18,264 +	963	360	17,904	945	355
20	19,227	+0,963	−0,378	18,849 −	+0,944	−0,374
21	20,190	963	397	19,793 +	946	391
22	21,153 +	964	414	20,739 −	945	409
23	22,117 −	963	433	21,684	946	427
24	23,080 +	964	450	22,630	946	445
25	24,044 +	+0,965	−0,468	23,576 +	+0,947	−0,462
26	25,009 −	964	486	24,523	947	479
27	25,973 +	965	503	25,470	948	496
28	26,938	965	520	26,418 −	948	514
29	27,903 +	966	537	27,366 −	948	531
30	28,869	+0,966	−0,555	28,314	+0,949	−0,547
31	29,835 −	966	572	29,263	950	564
32	30,801	966	588	30,213 −	950	581
33	31,767 +	967	604	31,163 −	950	598
34	32,734 +	967	621	32,113	951	614
35	33,701 +	+0,968	−0,637	33,064	+0,952	−0,630
36	34,669	968	653	34,016 −	952	646
37	35,637	969	669	34,968	953	662
38	36,606 −	968	685	35,921 −	953	677
39	37,574 +	970	700	36,874	954	692
40	38,544 −	+0,969	−0,716	37,828	+0,955	−0,708
41	39,513 +	970	730	38,783 −	955	723
42	40,483 +	971	745	39,738 −	956	738
43	41,454	971	760	40,694 −	956	752
44	42,425	972	775	41,650 +	957	766
45	43,397 −	+0,971	−0,790	42,607 +	+0,958	−0,780

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	$e = 0{,}02$				$e = 0{,}03$			
v	$\log \frac{r}{a}$		D	D'	$\log \frac{r}{a}$		D	D'
0°	$\bar{1}$,99123−	+	0	−446	$\bar{1}$,98677	+	0	−450
1	99123−		0	446	98677+		1	450
2	99123		1	445	98678		1	450
3	99124−		1	445	98679		1	450
4	99125−		1	445	98680+		2	449
5	$\bar{1}$,99126	+	1	−444	$\bar{1}$,98682	+	2	−449
6	99127+		2	443	98684		3	448
7	99129		2	442	98687−		2	447
8	99131		2	442	98689+		4	446
9	99133		3	440	98693−		3	445
10	$\bar{1}$,99136−	+	2	−440	$\bar{1}$,98696+	+	4	−444
11	99138+		3	438	98700+		5	442
12	99141+		3	436	98705		5	441
13	99144+		4	434	98710−		5	440
14	99148		4	433	98715−		5	439
15	$\bar{1}$,99152−	+	4	−432	$\bar{1}$,98720+	+	6	−436
16	99156−		4	430	98726+		6	434
17	99160		4	428	98732+		7	432
18	99164+		5	425	98739		7	430
19	99169		5	423	98746		8	428
20	$\bar{1}$,99174	+	5	−420	$\bar{1}$,98754−	+	7	−426
21	99179		6	418	98761+		8	423
22	99185−		5	416	98769+		9	420
23	99190−		6	412	98778		9	418
24	99196+		6	409	98787−		9	415
25	$\bar{1}$,99202+	+	7	−406	$\bar{1}$,98796	+	9	−412
26	99209		7	404	98805+		10	408
27	99216−		6	401	98815+		11	405
28	99222+		8	396	98826		10	403
29	99230−		7	394	98836		11	399
30	$\bar{1}$,99237	+	7	−390	$\bar{1}$,98847	+	11	−395
31	99244+		8	386	98858+		12	392
32	99252		8	382	98870		12	388
33	99260+		8	378	98882−		12	385
34	99268+		9	374	98894		13	380
35	$\bar{1}$,99277	+	9	−370	$\bar{1}$,98907−	+	12	−377
36	99286−		8	367	98919+		14	372
37	99294+		9	361	98933−		13	368
38	99303+		10	357	98946		14	363
39	99313−		9	353	98960		14	359
40	$\bar{1}$,99322+	+	10	−348	$\bar{1}$,98974	+	15	−354
41	99332		10	343	98989−		14	350
42	99342		10	339	99003+		15	345
43	99352		10	334	99018+		16	340
44	99362+		11	328	99034−		15	336
45	$\bar{1}$,99373−	+	10	−324	$\bar{1}$,99049+	+	16	−330

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	$e = 0{,}02$			$e = 0{,}03$		
v	M	D	D'	M	D	D'
45°	43°,397−	+0°,971	−0°,790	42°,607+	+0°,958	−0°,780
46	44,368+	973	803	43,565+	959	794
47	45,341	973	817	44,524	959	808
48	46,314	973	831	45,483+	961	822
49	47,287+	974	843	46,444−	960	836
50	48,261+	+0,975	−0,857	47,404+	+0,962	−0,848
51	49,236−	975	870	48,366	962	861
52	50,211−	975	883	49,328+	963	874
53	51,186	976	895	50,291+	964	886
54	52,162	977	907	51,255+	965	898
55	53,139−	+0,977	−0,919	52,220	+0,966	−0,910
56	54,116	978	930	53,186−	966	923
57	55,094−	978	942	54,152	967	934
58	56,072	979	953	55,119+	968	944
59	57,051−	979	964	56,087+	969	955
60	58,030	+0,980	−0,974	57,056+	+0,970	−0,966
61	59,010	981	984	58,026	971	977
62	59,991−	981	0,994	58,997−	971	987
63	60,972	982	1,004	59,968+	973	0,996
64	61,954−	982	013	60,941−	973	1,006
65	62,936	+0,983	−1,022	61,914	+0,974	−1,015
66	63,919	984	031	62,888+	976	024
67	64,903−	984	039	63,864−	976	033
68	65,887	985	047	64,840−	977	042
69	66,872	986	055	65,817−	978	050
70	67,858−	+0,986	−1,063	66,795−	+0,979	−1,057
71	68,844−	987	070	67,774−	980	065
72	69,831−	987	077	68,754−	980	072
73	70,818	988	084	69,734+	982	078
74	71,806	989	090	70,716+	983	085
75	72,795	+0,989	−1,096	71,699	+0,984	−1,091
76	73,784+	991	101	72,683	985	097
77	74,775−	990	107	73,668−	986	103
78	75,765+	992	111	74,654−	987	109
79	76,757	992	116	75,641+	987	114
80	77,749	+0,993	−1,121	76,628	+0,989	−1,117
81	78,742	993	125	77,617	990	122
82	79,735+	995	128	78,607	991	126
83	80,730−	994	132	79,598−	992	130
84	81,724+	996	134	80,590−	993	133
85	82,720	+0,996	−1,137	81,583−	+0,994	−1,136
86	83,716+	997	139	82,577−	995	139
87	84,713+	998	141	83,572−	996	141
88	85,711	998	143	84,568−	997	143
89	86,709+	0,999	144	85,565−	998	144
90	87,708+	+1,000	−1,145	86,563−	+0,999	−1,145

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	$e = 0{,}02$			$e = 0{,}03$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}99373-$	+ 10	−324	$\bar{1}{,}99049+$	+ 16	−330
46	99383+	11	318	99065	16	325
47	99394+	11	313	99081+	17	319
48	99405+	11	307	99098−	16	315
49	99416+	12	302	99114+	17	309
50	$\bar{1}{,}99428$	+ 11	−297	$\bar{1}{,}99131+$	+ 18	−303
51	99439+	12	290	99149−	17	298
52	99451	12	285	99166	18	292
53	99463	12	279	99184−	18	287
54	99475	12	273	99202−	18	281
55	$\bar{1}{,}99487+$	+ 13	−267	$\bar{1}{,}99220$	+ 18	−275
56	99500−	12	262	99238+	19	268
57	99512	13	255	99257	19	263
58	99525−	13	249	99276	19	256
59	99538−	12	243	99295	19	250
60	$\bar{1}{,}99550+$	+ 14	−236	$\bar{1}{,}99314+$	+ 20	−244
61	99564−	13	230	99334−	20	238
62	99577−	13	223	99354−	19	232
63	99590	14	217	99373+	20	224
64	99604−	13	211	99393+	21	217
65	$\bar{1}{,}99617$	+ 14	−203	$\bar{1}{,}99414-$	+ 20	−212
66	99631−	14	197	99434	21	204
67	99645−	13	190	99455−	21	198
68	99658+	14	182	99476−	20	191
69	99672+	15	176	99496+	22	184
70	$\bar{1}{,}99687-$	+ 14	−169	$\bar{1}{,}99518-$	+ 21	−178
71	99701−	14	162	99539−	21	170
72	99715	14	155	99560	22	163
73	99729+	15	147	99582−	21	156
74	99744	14	141	99603+	22	149
75	$\bar{1}{,}99758+$	+ 15	−133	$\bar{1}{,}99625$	+ 22	−142
76	99773	15	126	99647	22	135
77	99788−	14	119	99669−	22	128
78	99802+	15	111	99691	22	120
79	99817+	15	104	99713	22	113
80	$\bar{1}{,}99832$	+ 15	− 97	$\bar{1}{,}99735+$	+ 21	−105
81	99847	15	91	99756−	24	96
82	99862	15	82	99780	22	91
83	99877	15	75	99802+	23	83
84	99892	15	67	99825	22	76
85	$\bar{1}{,}99907$	+ 15	− 60	$\bar{1}{,}99847+$	+ 23	− 68
86	99922	15	52	99870	23	61
87	99937	15	44	99893−	22	53
88	99952+	15	37	99915+	23	45
89	99967+	16	29	99938	23	38
60	$\bar{1}{,}99983-$	+ 15	− 22	$\bar{1}{,}99961$	+ 23	− 31

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	e = 0,02			e = 0,03		
v	M	D	D'	M	D	D'
90°	87°,708+	+1°,000	−1°,145	86°,563−	+0°,999	−1°,145
91	88,708	001	146	87,562	1,000	146
92	89,709−	001	147	88,562	001	146
93	90,710−	002	147	89,563+	003	146
94	91,712−	002	146	90,566−	003	147
95	92,714	+1,003	−1,145	91,569	+1,005	−1,146
96	93,717+	004	143	92,574−	005	146
97	94,721+	005	142	93,579	007	144
98	95,726	005	140	94,586−	007	142
99	96,731+	006	138	95,593	009	140
100	97,737+	+1,007	−1,135	96,602−	+1,009	−1,138
101	98,744	007	133	97,611+	011	135
102	99,751+	008	129	98,622	012	132
103	100,759+	009	125	99,634	013	129
104	101,768+	010	121	100,647−	013	126
105	102,778−	+1,010	−1,118	101,660+	+1,015	−1,121
106	103,788	011	113	102,675+	016	117
107	104,799−	011	108	103,691	017	112
108	105,810+	013	102	104,708	018	107
109	106,823−	012	097	105,726	019	102
110	107,835+	+1,014	−1,090	106,745	+1,020	−1,096
111	108,849	014	084	107,765	021	090
112	109,863	015	077	108,786	022	083
113	110,878	016	070	109,808	023	076
114	111,894−	016	063	110,831	024	069
115	112,910−	+1,017	−1,055	111,855	+1,025	−1,062
116	113,927−	017	047	112,880	026	054
117	114,944	018	038	113,906−	027	045
118	115,962+	019	029	114,933−	028	037
119	116,981	019	020	115,961−	028	028
120	118,000+	+1,020	−1,011	116,989+	+1,030	−1,018
121	119,020+	021	1,001	118,019	031	1,009
122	120,041	021	0,991	119,050	031	0,999
123	121,062+	022	981	120,081+	033	988
124	122,084	022	970	121,114	033	978
125	123,106+	+1,023	−0,959	122,147+	+1,035	−0,967
126	124,129+	024	947	123,182	035	956
127	125,153	024	936	124,217	036	944
128	126,177+	025	924	125,253+	037	932
129	127,202	025	912	126,290+	038	920
130	128,227+	+1,026	−0,899	127,328	+1,039	−0,908
131	129,253+	027	886	128,367	039	895
132	130,280−	027	874	129,406+	041	881
133	131,307−	027	860	130,447	041	869
134	132,334	028	846	131,488	042	855
135	133,362	+1,029	−0,832	132,530	+1,043	−0,841

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	$e = 0{,}02$				$e = 0{,}03$		
v	$\log \frac{r}{a}$		D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}99983-$	+	15	− 22	$\bar{1}{,}99961$	+ 23	− 31
91	$\bar{1}{,}99998-$		15	14	$\bar{1}{,}99984-$	22	23
92	0,00013		15	− 7	0,00006+	23	15
93	00028		15	+ 1	00029	23	− 8
94	00043+		15	9	00052	23	0
95	0,00058+	+	16	+ 17	0,00075−	+ 22	+ 7
96	00074−		14	23	00097+	23	15
97	00088−		16	32	00120	23	23
98	00104−		15	39	00143−	22	30
99	00119−		15	46	00165	23	38
100	0,00134−	+	15	+ 54	0,00188−	+ 22	+ 45
101	00149−		14	61	00210+	23	53
102	00163−		15	70	00233−	22	60
103	00178+		15	77	00255	22	68
104	00193+		15	84	00277+	22	76
105	0,00208	+	15	+ 91	0,00299+	+ 23	+ 83
106	00223−		14	99	00322−	22	90
107	00237+		15	107	00344−	21	97
108	00252		14	113	00365+	22	106
109	00266+		15	121	00387	22	113
110	0,00281−	+	14	+128	0,00409	+ 21	+120
111	00295		14	135	00430+	22	128
112	00309+		14	143	00452−	21	134
113	00323+		14	150	00473	21	142
114	00337+		14	157	00494	21	149
115	0,00351+	+	14	+164	0,00515	+ 21	+156
116	00365		13	171	00536	20	163
117	00378−		14	178	00556+	20	170
118	00392+		14	184	00576	21	178
119	00406−		13	191	00597	20	184
120	0,00419	+	13	+198	0,00617+	+ 20	+191
121	00432+		13	205	00637	20	198
122	00445+		13	212	00657	19	204
123	00458+		13	218	00676+	20	211
124	00471		12	225	00696−	19	217
125	0,00483−	+	13	+232	0,00715−	+ 19	+223
126	00496		13	238	00734−	18	230
127	00509−		12	243	00752	19	237
128	00521−		12	250	00771−	18	242
129	00533−		12	256	00789−	18	249
130	0,00545−	+	11	+262	0,00807−	+ 17	+255
131	00556+		12	268	00824	18	261
132	00568−		11	274	00842−	17	267
133	00579		11	280	00859−	17	273
134	00590+		11	286	00876−	16	278
135	0,00601+	+	11	+291	0,00892	+ 16	+285

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	$e = 0{,}02$			$e = 0{,}03$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
135	133,362	+1,029	−0,832	132,530	+1,043	−0,841
136	134,391−	029	818	133,573	043	827
137	135,420−	029	804	134,616+	045	812
138	136,449+	030	788	135,661	045	797
139	137,479+	031	773	136,706	046	782
140	138,510−	+1,031	−0,758	137,752−	+1,046	−0,767
141	139,541−	031	743	138,798+	048	751
142	140,572+	032	726	139,846−	047	736
143	141,604	032	711	140,893+	049	719
144	142,636+	033	694	141,942	049	703
145	143,669	+1,033	−0,678	142,991+	+1,050	−0,686
146	144,702+	034	661	144,041+	051	669
147	145,736	034	644	145,092	051	652
148	146,770	034	627	146,143	052	635
149	147,804+	035	609	147,195−	052	618
150	148,839	+1,035	−0,592	148,247	+1,053	−0,600
151	149,874+	036	574	149,300	054	582
152	150,910−	036	556	150,354−	054	564
153	151,946−	036	538	151,408−	054	546
154	152,982−	036	520	152,462	055	527
155	154,018	+1,037	−0,501	153,517	+1,056	−0,508
156	155,055	037	482	154,573	055	490
157	156,092	037	464	155,628+	057	470
158	157,129+	038	444	156,685	057	451
159	158,167	038	425	157,742−	057	431
160	159,205	+1,038	−0,406	158,799	+1,058	−0,412
161	160,243	039	386	159,857−	057	393
162	161,282−	038	368	160,914+	059	372
163	162,320+	039	347	161,973	059	353
164	163,359	039	327	163,032−	059	333
165	164,398	+1,039	−0,307	164,091−	+1,059	−0,313
166	165,437+	040	287	165,150−	059	292
167	166,477	039	268	166,209+	060	271
168	167,516+	040	247	167,269	060	251
169	168,556	040	227	168,329+	061	230
170	169,596	+1,040	−0,206	169,390−	+1,060	−0,210
171	170,636	040	186	170,450	061	189
172	171,676	040	165	171,511−	060	168
173	172,716+	041	145	172,571+	061	147
174	173,757	040	125	173,632+	062	126
175	174,797+	1,041	−0,103	174,694−	+1,061	−0,106
176	175,838−	040	083	175,755−	061	085
177	176,878+	041	062	176,816	061	063
178	177,919	040	042	177,877+	062	042
179	178,959+	041	020	178,939−	061	021
180	180,000	+1,041	−0,000	180,000	+1,061	−0,000

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	$e = 0{,}02$				$e = 0{,}03$			
v	$\log \frac{r}{a}$		D	D'	$\log \frac{r}{a}$		D	D'
135°	0,00601	+	11	+291	0,00892	+	16	+285
136	00612		11	296	00908+		16	290
137	00623−		10	301	00924+		16	296
138	00633		10	307	00940		16	301
139	00643		10	313	00956−		15	306
140	0,00653	+	10	+318	0,00971−	+	14	+311
141	00663		10	322	00985+		15	317
142	00673−		9	327	01000		14	321
143	00682		9	332	01014		14	326
144	00691		9	337	01028		14	331
145	0,00700	+	9	+342	0,01042−	+	13	+335
146	00709−		8	346	01055−		13	340
147	00717+		9	351	01068−		12	344
148	00726−		8	354	01080		12	349
149	00734−		7	358	01092+		12	354
150	0,00741+	+	8	+363	0,01104	+	12	+358
151	00749		7	367	01116−		11	361
152	00756+		8	371	01127		11	365
153	00764−		7	374	01138−		10	369
154	00771+		6	377	01148		10	373
155	0,00777	+	6	+381	0,01158	+	10	+376
156	00783+		7	385	01168−		9	379
157	00790−		6	387	01177		9	383
158	00796−		5	390	01186		9	386
159	00801+		6	394	01195−		8	388
160	0,00807−	+	5	+396	0,01203	+	8	+391
161	00812−		5	399	01211−		7	394
162	00817−		4	401	01218		7	397
163	00821+		5	404	01225		7	399
164	00826−		4	406	01232−		6	401
165	0,00830	+	4	+408	0,01238	+	6	+404
166	00834−		3	410	01244		5	406
167	00837+		4	412	01249+		5	408
168	00841−		3	413	01254+		5	410
169	00844−		3	415	01259		4	411
170	0,00847−	+	2	+416	0,01263+	+	4	+413
171	00849		2	418	01267+		4	414
172	00851+		2	420	01271−		3	415
173	00853+		2	421	01274−		2	416
174	00855		2	421	01276+		3	417
175	0,00857−	+	1	+422	0,01279−	+	1	+417
176	00858		1	422	01280+		2	419
177	00859		0	423	01282		1	419
178	00859+		1	424	01283		1	419
179	00860		0	424	01284−		0	419
180	0,00860	+	0	+424	0,01284−	+	0	+419

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	$e = 0{,}04$			$e = 0{,}05$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+0,922	−0,000	0,000	+0,904	−0,000
1	0,922+	923	018	0,904−	903	019
2	1,845−	922	038	1,807+	904	037
3	2,767	923	056	2,711	904	055
4	3,690−	922	075	3,615−	904	074
5	4,612	+0,923	−0,093	4,519−	+0,904	−0,092
6	5,535	923	112	5,423−	904	111
7	6,458−	923	131	6,327	904	129
8	7,381−	923	150	7,231+	905	147
9	8,304−	923	168	8,136	905	166
10	9,227	+0,924	−0,186	9,041−	+0,905	−0,184
11	10,151−	923	205	9,946−	905	202
12	11,074+	924	223	10,851	906	220
13	11,998+	925	241	11,757−	906	238
14	12,923−	924	260	12,663−	906	256
15	13,847+	+0,925	−0,278	13,569	+0,907	−0,274
16	14,772	925	296	14,476	907	292
17	15,697+	926	314	15,383	908	310
18	16,623	926	332	16,291−	908	328
19	17,549	926	350	17,199	908	345
20	18,475+	+0,927	−0,368	18,107+	+0,910	−0,363
21	19,402+	928	385	19,017−	909	381
22	20,330−	927	404	19,926	910	398
23	21,257−	928	421	20,836+	911	415
24	22,185−	929	438	21,747+	912	432
25	23,114+	+0,930	−0,455	22,659−	+0,912	−0,450
26	24,044−	930	473	23,571−	912	467
27	24,974−	930	491	24,483+	914	483
28	25,904	931	507	25,397	914	501
29	26,835	932	524	26,311	915	517
30	27,767−	+0,932	−0,541	27,226	+0,916	−0,534
31	28,699−	933	557	28,142−	916	550
32	29,632−	933	574	29,058	917	566
33	30,565	934	590	29,975+	918	582
34	31,499+	935	606	30,893+	919	598
35	32,434+	+0,936	−0,622	31,812+	+0,920	−0,614
36	33,370	936	638	32,732+	921	630
37	34,306+	938	653	33,653	922	646
38	35,244−	938	669	34,575−	922	661
39	36,182−	938	685	35,497+	924	676
40	37,120+	+0,940	−0,699	36,421	+0,925	−0,692
41	38,060	940	714	37,346−	925	707
42	39,000+	942	729	38,271	927	721
43	39,942−	942	744	39,198	928	736
44	40,884−	943	758	40,126−	928	750
45	41,827−	+0,944	−0,773	41,054+	+0,930	−0,764

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	$e = 0{,}04$			$e = 0{,}05$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
0°	$\bar{1}{,}98227$	+ 0	−455	$\bar{1}{,}97772+$	+ 1	−459
1	98227+	1	454	97773−	1	460
2	98228	1	454	97774−	1	460
3	98229+	2	454	97775	2	459
4	98231	2	454	97777+	3	458
5	$\bar{1}{,}98233+$	+ 3	−453	$\bar{1}{,}97780+$	+ 4	−458
6	98236+	4	452	97784−	4	458
7	98240−	3	452	97788−	4	457
8	98243+	5	451	97792+	6	455
9	98248−	4	450	97798	6	455
10	$\bar{1}{,}98252+$	+ 6	−448	$\bar{1}{,}97804-$	+ 6	−454
11	98258	6	448	97810+	8	452
12	98264−	6	446	97818−	7	451
13	98270	6	445	97825+	9	449
14	98276−	8	442	97834	9	448
15	$\bar{1}{,}98284$	+ 8	−441	$\bar{1}{,}97843$	+ 10	−446
16	98292	8	439	97853	10	445
17	98300	9	437	97863−	11	443
18	98309	9	435	97874−	11	441
19	98318+	10	433	97885	12	438
20	$\bar{1}{,}98328$	+ 10	−431	$\bar{1}{,}97897+$	+ 13	−436
21	98338	11	428	97910	13	434
22	98349	11	426	97923+	14	431
23	98360	12	423	97937	15	428
24	98372−	12	420	97952−	15	426
25	$\bar{1}{,}98384$	+ 13	−417	$\bar{1}{,}97967-$	+ 15	−423
26	98397−	13	415	97982	16	420
27	98410−	13	412	97998+	17	416
28	98423	14	408	98015	17	414
29	98437	15	405	98032	18	410
30	$\bar{1}{,}98452-$	+ 14	−402	$\bar{1}{,}98050+$	+ 19	−407
31	98466+	16	397	98069−	19	404
32	98482−	15	394	98088−	19	400
33	98497+	17	390	98107+	20	396
34	98514−	16	387	98127+	21	392
35	$\bar{1}{,}98530+$	+ 17	−382	$\bar{1}{,}98148$	+ 21	−388
36	98547+	18	378	98169	22	384
37	98565	18	374	98191	22	380
38	98583−	18	370	98213	23	376
39	98601	19	365	98236−	23	372
40	$\bar{1}{,}98620-$	+ 19	−361	$\bar{1}{,}98259$	+ 24	−367
41	98639	19	356	98283−	24	363
42	98658+	20	351	98307	25	358
43	98678+	20	346	98332−	25	354
44	98698+	21	341	98357−	25	349
45	$\bar{1}{,}98719$	+ 21	−337	$\bar{1}{,}98382+$	+ 26	−343

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	e = 0,04			e = 0,05		
v	M	D	D'	M	D	D'
45°	41°,827 −	+0°,944	−0°,773	41°,054 +	+0°,930	−0°,764
46	42,771 −	945	787	41,984 +	931	778
47	43,716 −	945	801	42,915 +	933	792
48	44,661 +	947	813	43,848 −	933	806
49	45,608	948	827	44,781	935	819
50	46,556	+0,949	−0,840	45,716 −	+0,935	−0,833
51	47,505 −	949	854	46,651 +	937	845
52	48,454 +	951	866	47,588 +	939	857
53	49,405	952	878	48,527 −	939	871
54	50,357 −	953	891	49,466	941	883
55	51,310 −	+0,953	−0,903	50,407	+0,942	−0,895
56	52,263 +	955	914	51,349	944	906
57	53,218 +	957	925	52,293 −	944	919
58	54,175 −	957	938	53,237 +	947	929
59	55,132 −	958	948	54,184 −	947	941
60	56,090	+0,959	−0,959	55,131	+0,949	−0,951
61	57,049 +	961	969	56,080	950	962
62	58,010	962	980	57,030 +	952	972
63	58,972 −	963	0,990	57,982	953	982
64	59,935 −	964	1,000	58,935 +	955	0,992
65	60,899 −	+0,965	−1,009	59,890	+0,956	−1,002
66	61,864	967	018	60,846 +	958	011
67	62,831 −	967	027	61,804	959	020
68	63,798 +	969	035	62,763 +	961	029
69	64,767 +	971	043	63,724	962	037
70	65,738 −	+0,971	−1,052	64,686	+0,964	−1,045
71	66,709	973	059	65,650	965	053
72	67,682 −	974	067	66,615 +	967	061
73	68,656	975	074	67,582 +	969	068
74	69,631	977	080	68,551	970	075
75	70,608 −	+0,978	−1,087	69,521	+0,972	−1,082
76	71,586 −	979	093	70,493	973	089
77	72,565	980	099	71,466 +	975	094
78	73,545 +	982	104	72,441 +	977	100
79	74,527 +	984	109	73,418	978	106
80	75,511 −	+0,984	−1,115	74,396 +	+0,980	−1,111
81	76,495	986	119	75,376 +	982	115
82	77,481	987	123	76,358	983	120
83	78,468 +	989	127	77,341 +	985	124
84	79,457	990	131	78,326 +	987	128
85	80,447	+0,991	−1,134	79,313	+0,989	−1,131
86	81,438 +	993	136	80,302 −	990	135
87	82,431	994	139	81,292	992	138
88	83,425	996	141	82,284 −	993	140
89	84,421 −	997	144	83,277 +	996	142
90	85,418 −	+0,998	−1,145	84,273	+0,997	−1,144

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	$e = 0{,}04$			$e = 0{,}05$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45	$\bar{1}{,}98719$	+ 21	−337	$\bar{1}{,}98382+$	+ 26	−343
46	98740	22	332	98408+	27	338
47	98762−	21	327	98435	27	333
48	98783+	22	321	98462	28	328
49	98805+	23	315	98490−	27	323
50	$\bar{1}{,}98828$	+ 23	−311	$\bar{1}{,}98517+$	+ 29	−317
51	98851−	23	305	98546	29	312
52	98874	23	299	98575−	29	307
53	98897+	24	293	98604−	29	301
54	98921	24	288	98633+	30	295
55	$\bar{1}{,}98945+$	+ 25	−282	$\bar{1}{,}98663+$	+ 31	−289
56	98970−	24	276	98694−	30	284
57	98994+	26	270	98724+	32	277
58	99020−	25	264	98756−	31	272
59	99045	25	258	98787	32	265
60	$\bar{1}{,}99070+$	+ 26	−251	$\bar{1}{,}98819$	+ 32	−259
61	99096+	26	245	98851	33	253
62	99122+	27	238	98884−	32	247
63	99149	27	233	98916+	34	240
64	99176−	26	226	98950−	33	234
65	$\bar{1}{,}99202+$	+ 28	−219	$\bar{1}{,}98983$	+ 34	−227
66	99230−	27	213	99017	34	221
67	99257	28	206	99051	34	214
68	99285−	27	200	99085+	35	207
69	99312+	28	192	99120	35	201
70	$\bar{1}{,}99340+$	+ 29	−185	$\bar{1}{,}99155$	+ 35	−194
71	99369−	28	179	99190	35	187
72	99397	29	172	99225+	36	179
73	99426−	28	165	99261	36	173
74	99454+	29	157	99297	36	166
75	$\bar{1}{,}99483$	+ 29	−150	$\bar{1}{,}99333$	+ 36	−159
76	99512+	29	143	99369	37	151
77	99541+	30	135	99406−	36	145
78	99571−	29	129	99442	37	137
79	99600+	30	121	99479	37	130
80	$\bar{1}{,}99630$	+ 30	−114	$\bar{1}{,}99516$	+ 37	−123
81	99660−	29	107	99553	37	115
82	99689+	30	99	99590	37	108
83	99719+	30	92	99627+	38	100
84	99749+	30	84	99665	37	93
85	$\bar{1}{,}99779+$	+ 30	− 77	$1{,}99702+$	+ 38	− 85
86	99809+	31	69	99740	38	78
87	99840−	30	62	99778−	38	71
88	99870	30	54	99816−	37	63
89	99900	30	47	99853+	38	55
90	$\bar{1}{,}99930+$	+ 31	− 39	$\bar{1}{,}99891+$	+ 38	− 48

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	$e = 0{,}04$			$e = 0{,}05$		
v	M	D	D'	M	D	D
90°	85°,418 −	+0°,998	−1°,145	84°,273	+0°,997	−1°,144
91	86,416	1,000	146	85,270	0,999	146
92	87,416 −	001	147	86,269	1,000	147
93	88,417 −	002	148	87,269 +	003	147
94	89,419	004	147	88,272 −	004	148
95	90,423	+1,005	−1,147	89,276	+1,006	−1,148
96	91,428 +	007	146	90,282 −	007	148
97	92,435	009	146	91,289 +	010	147
98	93,444	009	145	92,299 −	011	146
99	94,453 −	011	143	93,310	013	145
100	95,464 −	+1,012	−1,141	94,323	+1,014	−1,143
101	96,476	014	139	95,337 +	017	141
102	97,490 −	015	136	96,354	018	139
103	98,505 −	016	133	97,372	020	136
104	99,521	018	129	98,392	022	133
105	100,539	+1,019	−1,125	99,414 −	+1,023	−1,130
106	101,558 +	021	121	100,437	025	125
107	102,579	022	117	101,462 +	027	121
108	103,601	023	112	102,489	029	116
109	104,624 +	025	106	103,518 −	030	112
110	105,649	+1,026	−1,101	104,548	+1,032	−1,106
111	106,675 +	028	095	105,580 +	034	100
112	107,703	029	089	106,614	035	095
113	108,732 −	030	083	107,649 +	038	088
114	109,762	031	075	108,687 −	039	082
115	110,793 +	+1,033	−1,067	109,726 −	+1,040	−1,075
116	111,826 +	035	060	110,766	042	066
117	112,861 −	035	053	111,808 +	044	059
118	113,896	037	044	112,852 +	046	050
119	114,933	038	035	113,898	047	042
120	115,971	+1,039	−1,026	114,945	+1,049	−1,033
121	117,010 +	041	016	115,994	050	024
122	118,051	042	1,007	117,044 +	052	014
123	119,093	043	0,997	118,096 +	054	1,004
124	120,136	044	986	119,150	055	0,994
125	121,180 +	+1,046	−0,975	120,205	+1,057	−0,984
126	122,226	047	964	121,262 −	058	973
127	123,273 −	048	953	122,320	060	961
128	124,321	049	941	123,380 −	061	950
129	125,370	050	929	124,441	063	937
130	126,420 +	+1,052	−0,916	125,504	+1,064	−0,925
131	127,472	053	904	126,568	066	913
132	128,525 −	053	891	127,634	067	900
133	129,578 +	055	877	128,701	068	886
134	130,633 +	056	864	129,769 +	070	872
135	131,689 +	+1,057	−0,850	130,839 +	+1,072	−0,858

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	$e = 0{,}04$			$e = 0{,}05$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}99930+$	+ 31	− 39	$\bar{1}{,}99891+$	+ 38	− 48
91	99961 −	30	32	99929+	38	40
92	$\bar{1}{,}99991$	30	24	$\bar{1}{,}99967$	38	33
93	0,00021 +	31	16	0,00005	38	25
94	00052	30	9	00043	38	17
95	0,00082	+ 30	− 1	0,00081	+ 38	− 10
96	00112+	31	+ 7	00119	38	− 2
97	00143 −	30	14	00157 −	38	+ 5
98	00173	30	22	00195 −	37	13
99	00203	30	29	00232+	38	21
100	0,00233	+ 30	+ 37	0,00270	+ 38	+ 28
101	00263+	30	45	00308 −	37	35
102	00293	30	52	00345	37	44
103	00323	30	59	00382 −	38	52
104	00353 −	29	67	00420	37	58
105	0,00382+	+ 30	+ 75	0,00457	+ 37	+ 66
106	00412	29	82	00494	37	74
107	00441+	30	90	00531	37	81
108	00471 −	29	97	00568 −	36	88
109	00500 −	29	104	00604	36	96
110	0,00529 −	+ 29	+111	0,00640+	+ 37	+104
111	00558 −	28	119	00677 −	35	110
112	00586	29	126	00712+	36	119
113	00615 −	28	133	00748	36	126
114	00643	28	141	00784 −	35	132
115	0,00671	+ 28	+148	0,00819	+ 35	+140
116	00699 −	27	155	00854 −	34	147
117	00726+	28	162	00888+	35	155
118	00754 −	27	169	00923	34	161
119	00781	27	176	00957	34	168
120	0,00808	+ 27	+183	0,00991	+ 33	+175
121	00835 −	26	189	01024+	34	183
122	00861	26	197	01058 −	32	189
123	00887	26	203	01090+	33	196
124	00913	25	210	01123	32	202
125	0,00938+	+ 26	+217	0,01155	+ 32	+209
126	00964 −	25	223	01187 −	31	216
127	00989 −	24	229	01218	31	223
128	01013+	25	236	01249	31	229
129	01038 −	24	242	01280	30	235
130	0,01062 −	+ 23	+248	0,01310	+ 30	+241
131	01085+	24	255	01340 −	29	247
132	01109 −	23	260	01369	29	254
133	01132 −	22	266	01398	29	260
134	01154+	23	273	01427 −	28	265
135	0,01177 −	+ 21	+278	0,01455 −	+ 27	+271

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	$e = 0{,}04$			$e = 0{,}05$		
v	M	D	D'	M	D	D'
135°	131°,689+	+1°,057	−0°,850	130°,839+	+1°,072	−0°,858
136	132,746+	058	835	131,911−	072	845
137	133,804+	060	821	132,983−	074	830
138	134,864−	060	807	134,057+	076	815
139	135,924−	061	791	135,133−	076	801
140	136,985	+1,062	−0,776	136,209	+1,078	−0,785
141	138,047	063	760	137,287	079	769
142	139,110	064	744	138,366	080	753
143	140,174+	065	728	139,446+	082	736
144	141,239+	066	711	140,528−	082	721
145	142,305	+1,067	−0,695	141,610+	+1,084	−0,703
146	143,372	068	678	142,694	085	686
147	144,440−	068	661	143,779	086	669
148	145,508	069	643	144,865−	087	652
149	146,577+	070	625	145,952−	088	634
150	147,647+	+1,071	−0,607	147,040−	+1,089	−0,616
151	148,718+	072	589	148,129−	090	598
152	149,790	072	571	149,219−	090	579
153	150,862	073	553	150,309+	092	560
154	151,935+	074	534	151,401+	093	541
155	153,009	+1,074	−0,515	152,494	+1,093	−0,522
156	154,083+	075	496	153,587+	095	503
157	155,158+	076	476	154,682−	095	484
158	156,234	077	457	155,777−	096	464
159	157,311+	076	438	156,873−	096	444
160	158,387	+1,077	−0,418	157,969	+1,097	−0,424
161	159,464+	078	398	159,066+	098	403
162	160,542	078	378	160,164+	099	383
163	161,620+	079	357	161,263	099	363
164	162,699	079	337	162,362	100	342
165	163,778+	+1,080	−0,316	163,462−	+1,100	−0,322
166	164,858	080	296	164,562−	100	301
167	165,938	080	276	165,662+	102	279
168	167,018+	081	254	166,764−	101	259
169	168,099	081	234	167,865	102	237
170	169,180	+1,081	−0,213	168,967	+1,102	−0,216
171	170,261	082	192	170,069+	103	194
172	171,343−	081	171	171,172	103	173
173	172,424+	082	149	172,275	103	152
174	173,506	082	128	173,378	103	130
175	174,588+	+1,082	−0,107	174,481+	+1,104	−0,108
176	175,670+	083	085	175,585	104	087
177	176,753−	082	064	176,689−	103	066
178	177,835	083	043	177,792+	104	043
179	178,918−	082	022	178,896	104	022
180	180,000	+1,082	−0,000	180,000	+1,104	−0,000

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	$e = 0{,}04$				$e = 0{,}05$			
v	$\log \frac{r}{a}$		D	D'	$\log \frac{r}{a}$		D	D'
135°	0,01177 −	+	21	+278	0,01455 −	+	27	+271
136	01198 +		22	284	01482		27	277
137	01220		21	289	01509		27	283
138	01241		21	295	01536 −		26	288
139	01262 −		20	300	01562		25	294
140	0,01282	+	20	+305	0,01587 +	+	26	+300
141	01302		19	311	01613 −		24	304
142	01321 +		19	316	01637		24	310
143	01340 +		19	321	01661		24	315
144	01359		18	326	01685 −		23	319
145	0,01377 +	+	18	+331	0,01708 −	+	22	+324
146	01395		17	335	01730		22	329
147	01412 +		17	340	01752 −		21	334
148	01429 +		17	344	01773		21	338
149	01446 −		16	348	01794 −		20	342
150	0,01462 −	+	15	+352	0,01814 −	+	19	+347
151	01477		15	356	01833 +		19	351
152	01492		15	360	01852		19	355
153	01507 −		14	364	01871 −		17	358
154	01521 −		13	367	01888 +		17	363
155	0,01534	+	13	+371	0,01905 +	+	17	+367
156	01547		13	375	01922 −		16	370
157	01560 −		12	378	01938 −		15	373
158	01572 −		11	381	01953		14	376
159	01583 +		11	384	01967 +		14	380
160	0,01594 +	+	11	+387	0,01981 +	+	14	+383
161	01605		10	390	01995 −		12	385
162	01615		9	392	02007 +		12	388
163	01624 +		9	395	02019		11	391
164	01633 +		9	397	02030 +		11	393
165	0,01642 −	+	8	+399	0,02041	+	10	+395
166	01650 −		7	401	02051		9	397
167	01657		7	403	02060 +		9	400
168	01664 −		6	405	02069		8	401
169	01670		6	407	02077		7	403
170	0,01676	+	5	+408	0,02084 +	+	7	+405
171	01681		5	410	02091		6	405
172	01686 −		4	411	02097 −		5	407
173	01690		3	412	02102		4	408
174	01693 +		3	413	02106 +		4	409
175	0,01696 +	+	3	+414	0,02110 +	+	3	+410
176	01699		2	414	02113 +		3	411
177	01701		1	415	02116		2	411
178	01702 +		1	416	02118 −		1	411
179	01703		0	416	02119 −		0	411
180	0,01703 +	+	0	+416	0,02119	+	0	+412

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	$e = 0{,}06$			$e = 0{,}07$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+0,885	−0,000	0,000	+0,867	−0,000
1	0,885+	885	018	0,867	867	018
2	1,770+	886	036	1,734	867	036
3	2,656−	885	055	2,601+	867	053
4	3,541	886	073	3,468+	868	071
5	4,427−	+0,885	−0,091	4,336	+0,867	−0,090
6	5,312+	886	109	5,203+	868	107
7	6,198	886	127	6,071	868	125
8	7,084	886	145	6,939	868	143
9	7,970+	887	163	7,807+	869	160
10	8,857	+0,887	−0,181	8,676	+0,869	−0,178
11	9,744	887	199	9,545	869	196
12	10,631	888	217	10,414+	870	214
13	11,519−	888	235	11,284	870	231
14	12,407−	888	253	12,154	871	249
15	13,295	+0,889	−0,270	13,025	+0,871	−0,267
16	14,184	889	288	13,896	872	284
17	15,073+	890	305	14,768−	872	302
18	15,963	891	323	15,640	873	319
19	16,854−	890	341	16,513	874	336
20	17,744+	+0,892	−0,357	17,387−	+0,874	−0,354
21	18,636	892	375	18,261−	875	370
22	19,528+	893	392	19,136−	875	387
23	20,421	894	410	20,011+	877	404
24	21,315−	894	427	20,888	877	421
25	22,209	+0,895	−0,444	21,765+	+0,879	−0,438
26	23,104	896	460	22,644−	879	455
27	24,000	896	477	23,523−	880	472
28	24,896+	898	493	24,403−	881	488
29	25,794	898	510	25,284−	881	504
30	26,692+	+0,900	−0,527	26,165+	+0,883	−0,520
31	27,592−	900	544	27,048+	884	536
32	28,492−	901	560	27,932+	885	552
33	29,393−	902	576	28,817+	887	568
34	30,295	903	591	29,704−	887	584
35	31,198	+0,904	−0,607	30,591	+0,888	−0,600
36	32,102	905	623	31,479+	890	615
37	33,007+	907	638	32,369	891	630
38	33,914−	907	654	33,260	892	646
39	34,821	908	669	34,152+	894	660
40	35,729+	+0,910	−0,683	35,046	+0,895	−0,676
41	36,639	911	698	35,941−	896	691
42	37,550	912	713	36,837	898	705
43	38,462	914	727	37,735−	899	720
44	39,376−	914	742	38,634−	900	734
45	40,290	+0,916	−0,756	39,534	+0,902	−0,748

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	$e = 0{,}06$				$e = 0{,}07$			
v	$\log \frac{r}{a}$		D	D'	$\log \frac{r}{a}$		D	D'
0°	$\bar{1}$,97313−	+	0	−465	$\bar{1}$,96848+	+	1	−469
1	97313		1	464	96849−		1	470
2	97314+		2	464	96850		2	469
3	97316		3	464	96852		3	469
4	97319−		3	464	96855+		4	468
5	$\bar{1}$,97322	+	4	−463	$\bar{1}$,96859	+	5	−468
6	97326+		5	462	96864		5	467
7	97331		6	462	96869+		7	466
8	97337−		6	461	96876		7	466
9	97343		7	460	96883+		8	465
10	$\bar{1}$,97350	+	8	−459	$\bar{1}$,96891+	+	10	−463
11	97358		9	457	96901−		9	463
12	97367−		9	457	96910+		11	461
13	97376		10	455	96921		12	460
14	97386		11	453	96933−		12	459
15	$\bar{1}$,97397−	+	11	−452	$\bar{1}$,96945+	+	13	−456
16	97408		12	450	96958+		15	454
17	97420+		13	447	96973−		15	453
18	97433+		14	445	96988−		15	451
19	97447		14	444	97003+		17	449
20	$\bar{1}$,97461+	+	15	−441	$\bar{1}$,97020	+	17	−447
21	97476+		16	439	97037+		19	444
22	97492		17	436	97056−		19	442
23	97509−		17	434	97075−		20	440
24	97526		18	431	97095−		20	437
25	$\bar{1}$,97544−	+	18	−429	$\bar{1}$,97115+	+	22	−434
26	97562+		20	425	97137−		22	431
27	97582−		19	423	97159		23	428
28	97601+		21	419	97182		24	425
29	97622		21	416	97206		25	422
30	$\bar{1}$,97643+	+	22	−412	$\bar{1}$,97231−	+	25	−419
31	97665+		23	409	97256		26	415
32	97688		23	406	97282		27	412
33	97711		24	402	97309		28	408
34	97735		25	398	97337−		28	405
35	$\bar{1}$,97760−	+	25	−395	$\bar{1}$,97365	+	29	−400
36	97785		26	391	97394+		30	396
37	97811−		26	387	97424+		31	393
38	97837		27	382	97455		31	389
39	97864		28	378	97486		32	384
40	$\bar{1}$,97892−	+	28	−374	$\bar{1}$,97518	+	33	−380
41	97920		29	369	97551		33	376
42	97949		29	365	97584+		34	371
43	97978+		30	360	97618+		35	366
44	98008+		31	355	97653		36	362
45	$\bar{1}$,98039	+	31	−350	$\bar{1}$,97689−	+	36	−358

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	$e = 0{,}06$			$e = 0{,}07$		
v	M	D	D'	M	D	D'
45°	40°,290	+0°,916	−0°,756	39°,534	+0°,902	−0°,748
46	41,206	917	770	40,436	904	762
47	42,123+	919	783	41,340−	905	776
48	43,042	920	797	42,245−	906	790
49	43,962	921	811	43,151+	908	802
50	44,883+	+0,923	−0,824	44,059+	+0,910	−0,815
51	45,806+	925	837	44,969+	912	829
52	46,731−	925	850	45,881−	913	842
53	47,656+	927	862	46,794	915	854
54	48,583+	929	874	47,709	916	867
55	49,512+	+0,931	−0,887	48,625+	+0,919	−0,878
56	50,443−	931	899	49,544	920	891
57	51,374+	934	910	50,464	922	903
58	52,308	935	922	51,386	924	914
59	53,243	937	933	52,310	926	926
60	54,180−	+0,938	−0,944	53,236−	+0,927	−0,937
61	55,118	940	955	54,163	930	947
62	56,058	942	965	55,093−	931	958
63	57,000−	943	976	56,024	934	968
64	57,943	945	985	56,958−	935	979
65	58,888+	+0,947	−0,995	57,893	+0,938	−0,988
66	59,835	949	1,004	58,831−	939	0,999
67	60,784	950	014	59,770	942	1,007
68	61,734+	953	022	60,712−	943	017
69	62,687−	954	032	61,655	946	025
70	63,641	+0,956	−1,040	62,601	+0,948	−1,034
71	64,597−	957	048	63,549−	950	042
72	65,554+	960	055	64,499−	952	050
73	66,514	962	063	65,451	954	058
74	67,476−	963	071	66,405	957	065
75	68,439	+0,965	−1,077	67,362−	+0,958	−1,073
76	69,404+	968	084	68,320+	961	079
77	70,372−	969	091	69,281+	964	085
78	71,341	971	096	70,245−	965	092
79	72,312	973	102	71,210+	968	098
80	73,285+	+0,976	−1,107	72,178	+,0970	−1,104
81	74,261−	977	113	73,148	973	109
82	75,238−	979	117	74,121−	974	114
83	76,217	981	122	75,095+	977	118
84	77,198+	984	126	76,072+	980	123
85	78,182−	+0,985	−1,130	77,052	+0,982	−1,127
86	79,167	987	133	78,034	984	131
87	80,154	990	136	79,018	987	134
88	81,144−	991	139	80,005−	989	138
89	82,135	994	141	80,994−	991	141
90	83,129−	+0,995	−1,144	81,985	+0,994	−1,143

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	$e = 0{,}06$			$e = 0{,}07$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}98039$	+ 31	−350	$\bar{1}{,}97689-$	+ 36	−358
46	98070	32	345	97725−	36	353
47	98102−	32	341	97761+	38	347
48	98134	33	335	97799−	38	343
49	98167−	33	330	97837−	38	337
50	$\bar{1}{,}98200$	+ 34	−325	$\bar{1}{,}97875+$	+ 39	−332
51	98234−	34	320	97914+	40	326
52	98268	35	314	97954+	41	321
53	98303	35	308	97995−	41	316
54	98338	36	302	98036−	41	310
55	$\bar{1}{,}98374$	+ 36	−297	$\bar{1}{,}98077$	+ 42	−304
56	98410	37	291	98119	43	298
57	98447	37	285	98162−	43	293
58	98484	38	279	98205	43	287
59	98522−	38	274	98248+	45	280
60	$\bar{1}{,}98560-$	+ 38	−267	$\bar{1}{,}98293-$	+ 44	−275
61	98598	39	261	98337+	45	268
62	98637	39	255	98382+	46	262
63	98676+	40	248	98428	46	256
64	98716	40	242	98474	47	250
65	$\bar{1}{,}98756$	+ 40	−235	$\bar{1}{,}98521-$	+ 46	−244
66	98796+	41	229	98567+	48	236
67	98837	41	222	98615	48	231
68	98878	41	215	98663−	48	224
69	98919+	42	208	98711−	48	217
70	$\bar{1}{,}98961$	+ 42	−202	$\bar{1}{,}98759+$	+ 49	−210
71	99003+	43	195	98808	49	203
72	99046−	42	189	98857+	50	196
73	99088	43	181	98907	50	190
74	99131	43	174	98957−	50	183
75	$\bar{1}{,}99174$	+ 44	−167	$\bar{1}{,}99007$	+ 50	−176
76	99218−	43	161	99057+	51	168
77	99261	44	153	99108	51	161
78	99305	44	146	99159	51	154
79	99349	44	139	99210+	52	147
80	$\bar{1}{,}99393$	+ 45	−131	$\bar{1}{,}99262$	+ 52	−140
81	99438−	44	124	99314−	52	133
82	99482+	45	116	99366−	52	126
83	99527	45	109	99418−	52	118
84	99572	45	102	99470	53	110
85	$\bar{1}{,}99617$	+ 45	− 94	$\bar{1}{,}99523-$	+ 52	−104
86	99662	45	87	99575	53	96
87	99707+	46	79	99628	53	88
88	99753−	45	72	99681−	53	81
89	99798	45	64	99734−	53	73
90	$\bar{1}{,}99843+$	+ 46	− 56	$\bar{1}{,}99787-$	+ 53	− 66

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	$e = 0{,}06$			$e = 0{,}07$		
v	M	D	D'	M	D	D'
90°	83°,129 −	+0°,995	−1°,144	81°,985	+0°,994	−1°,143
91	84,124 +	0,998	145	82,979	996	145
92	85,122	1,000	147	83,975 +	0,999	146
93	86,122	002	148	84,974	1,001	148
94	87,124 −	004	149	85,975 +	004	149
95	88,128	+1,006	−1,149	86,979	+1,006	−1,150
96	89,134	008	149	87,985	009	150
97	90,142 +	011	148	88,994 −	011	150
98	91,153 −	012	148	90,005 −	013	150
99	92,165	015	147	91,018	016	149
100	93,180 −	+1,016	−1,146	92,034	+1,019	−1,147
101	94,196 +	019	143	93,053 −	021	147
102	95,215 −	021	141	94,074 −	023	145
103	96,236	023	139	95,097	026	142
104	97,259 +	025	136	96,123	028	140
105	98,284 +	+1,028	−1,133	97,151 +	+1,031	−1,136
106	99,312 −	029	130	98,182 +	033	133
107	100,341	032	126	99,215 −	036	129
108	101,373 −	033	122	100,251 +	039	125
109	102,406	036	116	101,290 −	040	122
110	103,442	+1,038	−1,112	102,330 +	+1,044	−1,116
111	104,480 −	039	106	103,374 −	045	112
112	105,519 +	042	100	104,419	048	106
113	106,561 +	044	094	105,467 +	051	100
114	107,605 +	046	087	106,518 −	053	094
115	108,651 +	+1,049	−1,080	107,571 −	+1,055	−1,087
116	109,700 +	049	074	108,626	058	080
117	110,749 +	053	065	109,684 −	060	073
118	111,802 −	054	058	110,744 −	062	065
119	112,856 −	056	050	111,806	065	057
120	113,912 −	+1,058	−1,041	112,871	+1,067	−1,048
121	114,970 −	060	032	113,938	070	039
122	116,030 −	062	022	115,008 −	071	030
123	117,092 −	064	013	116,079 +	074	020
124	118,156 −	065	1,003	117,153 +	077	010
125	119,221 +	+1,068	−0,991	118,230 −	+1,078	−1,000
126	120,289	070	981	119,308 +	081	0,989
127	121,359 −	071	970	120,389	083	978
128	122,430 +	074	958	121,472	085	967
129	123,504 −	075	947	122,557	088	955
130	124,579 −	+1,076	−0,934	123,645 −	+1,089	−0,943
131	125,655 +	079	921	124,734	092	931
132	126,734	081	908	125,826 −	093	918
133	127,815 −	082	896	126,919 +	096	904
134	128,897 −	084	882	128,015	098	891
135	129,981 −	+1,085	−0,868	129,113 −	+1,099	−0,878

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	$e = 0{,}06$			$e = 0{,}07$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}99843+$	+ 46	− 56	$\bar{1}{,}99787-$	+ 53	− 66
91	99889	45	49	99840−	53	58
92	99934+	46	41	99893	53	50
93	$\bar{1}{,}99980$	46	34	99946	53	43
94	0,00026−	45	27	$\bar{1}{,}99999+$	53	35
95	0,00071	+ 46	− 19	0,00052+	+ 54	− 27
96	00117−	45	11	00106−	53	20
97	00162	46	− 3	00159−	53	12
98	00208−	45	+ 4	00212	53	− 5
99	00253	45	12	00265	53	+ 3
100	0,00298+	+ 45	+ 20	0,00318	+ 53	+ 11
101	00343+	46	28	00371−	52	18
102	00389−	45	34	00423+	53	27
103	00434−	44	42	00476	52	34
104	00478+	45	50	00528+	53	42
105	0,00523	+ 45	+ 58	0,00581−	+ 52	+ 49
106	00568−	44	65	00633	52	57
107	00612	44	73	00685−	51	64
108	00656	44	80	00736+	52	72
109	00700	44	88	00788	51	79
110	0,00744	+ 43	+ 95	0,00839	+ 51	+ 87
111	00787+	44	103	00890	51	94
112	00831−	43	110	00941−	50	102
113	00874−	42	117	00991	50	109
114	00916−	43	125	01041	50	117
115	0,00959	+ 42	+132	0,01091	+ 49	+124
116	01001	42	139	01140+	49	132
117	01043−	41	146	01189+	49	139
118	01084+	41	154	01238	48	146
119	01125+	41	161	01286	48	153
120	0,01166	+ 41	+168	0,01334	+ 47	+160
121	01207−	40	174	01381+	47	168
122	01247−	39	181	01428+	47	174
123	01286+	39	189	01475	46	181
124	01325+	39	196	01521	45	188
125	0,01364+	+ 39	+202	0,01566+	+ 45	+195
126	01403−	38	208	01611+	45	202
127	01441−	37	215	01656	44	208
128	01478	37	222	01700	43	215
129	01515	36	228	01743+	43	222
130	0,01551+	+ 36	+235	0,01786	+ 42	+228
131	01587+	36	241	01828+	42	235
132	01623	35	247	01870	41	240
133	01658	34	253	01911	41	247
134	01692+	34	260	01952−	39	252
135	0,01726	+ 33	+265	0,01991+	+ 40	+259

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	$e = 0{,}06$			$e = 0{,}07$		
v	M	D	D'	M	D	D'
135°	129°,981 −	+1°,085	−0°,868	129°,113 −	+1°,099	−0°,878
136	131,066	087	854	130,212 +	102	863
137	132,153 +	089	839	131,314	104	848
138	133,242	090	824	132,418 −	105	834
139	134,332 +	092	809	133,523 +	108	818
140	135,424 +	+1,094	−0,793	134,631 −	+1,109	−0,804
141	136,518	095	778	135,740	111	788
142	137,613	097	762	136,851	113	771
143	138,710 −	097	746	137,964 −	114	755
144	139,807 +	100	729	139,078 +	117	738
145	140,907	+1,101	−0,712	140,195 −	+1,118	−0,722
146	142,008 −	102	695	141,313 −	119	704
147	143,110 −	103	678	142,432	121	686
148	144,213	105	660	143,553	123	668
149	145,318	106	642	144,676	124	651
150	146,424	+1,107	−0,624	145,800	+1,126	−0,632
151	147,531	109	605	146,926 −	127	614
152	148,640 −	109	587	148,053 −	128	595
153	149,749	111	568	149,181	130	576
154	150,860	112	549	150,311	131	557
155	151,972 −	+1,112	−0,530	151,442	+1,132	−0,537
156	153,084 +	114	510	152,574 +	134	517
157	154,198	115	490	153,708	135	498
158	155,313	116	470	154,843 −	135	478
159	156,429 −	116	451	155,978 +	137	457
160	157,545 +	+1,118	−0,430	157,115	+1,138	−0,436
161	158,663 −	118	410	158,253	139	416
162	159,781	119	389	159,392	140	395
163	160,900	120	368	160,532 −	140	374
164	162,020 −	120	348	161,672 +	142	352
165	163,140	+1,121	−0,326	162,814 −	+1,142	−0,332
166	164,261	122	305	163,956	143	310
167	165,383	122	284	165,099	144	288
168	166,505	123	262	166,243 −	144	267
169	167,628 −	123	241	167,387 −	145	245
170	168,751	+1,124	−0,219	168,532 −	+1,145	−0,223
171	169,875 −	124	198	169,677	146	201
172	170,999 −	124	176	170,823 −	146	179
173	172,123	125	154	171,969	147	156
174	173,248	125	132	173,116 −	147	135
175	174,373 −	+1,125	−0,110	174,263 −	+1,147	−0,112
176	175,498	125	088	175,410 −	147	090
177	176,623 +	126	066	176,557	148	067
178	177,749	125	044	177,705 −	147	045
179	178,874 +	126	022	178,852 +	148	022
180	180,000	+1,126	−0,000	180,000	+1,148	−0,000

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	$e = 0{,}06$			$e = 0{,}07$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,01726	+ 33	+265	0,01991+	+ 40	+259
136	01759+	33	272	02031+	38	264
137	01792	32	277	02069	38	271
138	01824+	32	283	02107−	37	276
139	01856	31	288	02144	36	282
140	0,01887	+ 30	+293	0,02180+	+ 36	+288
141	01917	30	299	02216	35	293
142	01947	29	304	02251	34	298
143	01976	28	309	02285	34	303
144	02004+	28	315	02319−	32	308
145	0,02032	+ 27	+319	0,02351+	+ 32	+314
146	02059+	27	324	02383	31	318
147	02086−	25	328	02414	30	323
148	02111+	25	333	02444+	30	328
149	02136+	25	338	02474	29	332
150	0,02161−	+ 23	+342	0,02503−	+ 27	+336
151	02184+	23	346	02530+	27	341
152	02207+	22	350	02557+	27	346
153	02229+	22	355	02584−	25	349
154	02251	21	358	02609	24	353
155	0,02272−	+ 20	+361	0,02633	+ 24	+357
156	02292−	19	365	02657−	22	360
157	02311−	18	368	02679+	22	364
158	02329	18	372	02701	21	367
159	02347	17	375	02722−	20	370
160	0,02364−	+ 16	+378	0,02742−	+ 19	+373
161	02380	15	381	02761−	18	376
162	02395	15	384	02779−	17	379
163	02410−	13	386	02796−	16	382
164	02423+	13	389	02812	15	384
165	0,02436+	+ 12	+391	0,02827	+ 14	+387
166	02448+	12	393	02841+	14	389
167	02460−	10	395	02855−	12	391
168	02470	10	397	02867	11	393
169	02480−	9	398	02878+	11	395
170	0,02489−	+ 7	+400	0,02889−	+ 9	+396
171	02496+	8	402	02898	9	398
172	02504−	6	403	02907−	7	399
173	02510	5	404	02914	6	400
174	02515+	5	405	02920+	6	402
175	0,02520	+ 4	+406	0,02926	+ 4	+402
176	02524	3	406	02930	4	403
177	02527−	2	407	02934	2	403
178	02529	1	407	02936+	2	404
179	02530	+ 1	408	02938	0	404
180	0,02531	− 1	+407	0,02938+	+ 0	+404

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	$e = 0{,}08$			$e = 0{,}09$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+0,849	−0,000	0,000	+0,831	−0,000
1	0,849	849	018	0,831+	832	017
2	1,698+	850	035	1,663	832	035
3	2,548−	849	053	2,495−	831	053
4	3,397	849	071	3,326+	832	069
5	4,246+	+0,850	−0,088	4,158+	+0,832	−0,087
6	5,096	850	106	4,990+	833	104
7	5,946	850	123	5,823−	832	122
8	6,796+	851	141	6,655+	833	138
9	7,647−	851	159	7,488+	834	156
10	8,498−	+0,851	−0,176	8,322−	+0,834	−0,174
11	9,349	851	193	9,156−	834	191
12	10,200+	853	210	9,990−	834	208
13	11,053−	852	229	10,824+	836	224
14	11,905+	853	245	11,660−	836	242
15	12,758+	+0,854	−0,262	12,496−	+0,836	−0,259
16	13,612	854	280	13,332	837	276
17	14,466+	855	297	14,169+	838	293
18	15,321+	856	314	15,007	839	310
19	16,177	856	331	15,846−	839	327
20	17,033+	+0,858	−0,348	16,685	+0,840	−0,343
21	17,891−	858	366	17,525+	842	360
22	18,749−	858	382	18,367−	842	377
23	19,607+	860	398	19,209−	843	394
24	20,467	860	415	20,052−	844	410
25	21,327+	+0,862	−0,431	20,896−	+0,845	−0,427
26	22,189	862	448	21,741−	846	443
27	23,051+	864	464	22,587−	847	459
28	23,915	865	481	23,434	848	475
29	24,780−	865	498	24,282	850	491
30	25,645+	+0,867	−0,513	25,132−	+0,851	−0,507
31	26,512	868	529	25,983−	852	523
32	27,380	869	545	26,835−	853	539
33	28,249+	871	561	27,688	855	554
34	29,120−	871	577	28,543	856	570
35	29,991+	+0,873	−0,592	29,399	+0,858	−0,585
36	30,864+	875	607	30,257−	859	601
37	31,739−	875	623	31,116−	860	616
38	32,614+	878	638	31,976+	862	630
39	33,492−	878	654	32,838+	864	645
40	34,370	+0,880	−0,668	33,702	+0,866	−0,660
41	35,250+	882	682	34,568−	867	675
42	36,132	883	697	35,435−	868	690
43	37,015	885	712	36,303+	871	703
44	37,900−	886	726	37,174	872	718
45	38,786	+0,888	−0,740	38,046	+0,875	−0,732

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	$e = 0{,}08$				$e = 0{,}09$			
v	$\log \frac{r}{a}$		D	D'	$\log \frac{r}{a}$		D	D'
0°	$\bar{1}$,96379 −	+	0	−475	$\bar{1}$,95904	+	1	−480
1	96379 +		2	474	95905 −		1	480
2	96381 −		2	475	95906 +		3	479
3	96383		4	474	95909		4	479
4	96387 −		4	474	95913		5	480
5	$\bar{1}$,96391	+	6	−473	$\bar{1}$,95918 −	+	6	−479
6	96397 +		6	473	95924 −		7	478
7	96403 −		7	472	95931		8	477
8	96410		8	471	95939		9	476
9	96418 +		10	470	95948 +		11	475
10	$\bar{1}$,96428 −	+	10	−469	$\bar{1}$,95959 −	+	11	−475
11	96438		11	468	95970		13	473
12	96449		12	466	95983 −		13	472
13	96461 +		13	465	95996		15	470
14	96474 +		15	463	96011 −		15	469
15	$\bar{1}$,96489 −	+	15	−463	$\bar{1}$,96026 +	+	17	−467
16	96504 −		16	461	96043 +		18	466
17	96520 −		17	459	96061		19	464
18	96537 −		17	457	96080		20	462
19	96554 +		19	454	96100		21	460
20	$\bar{1}$,96573 +	+	20	−452	$\bar{1}$,96121	+	22	−458
21	96593		21	450	96143		23	456
22	96614 −		21	448	96166		24	453
23	96635 +		23	445	96190		25	451
24	96658		23	443	96215 +		26	448
25	$\bar{1}$,96681 +	+	25	−440	$\bar{1}$,96241 +	+	28	−445
26	96706 −		25	437	96269 −		28	443
27	96731		26	434	96297 −		29	440
28	96757		27	431	96326		30	437
29	96784		28	428	96356		31	434
30	$\bar{1}$,96812	+	29	−425	$\bar{1}$,96387 +	+	32	−431
31	96841 −		29	422	96419 +		33	427
32	96870 +		31	418	96452 +		35	424
33	96901		31	414	96487 −		35	421
34	96932 +		33	410	96522 −		36	417
35	$\bar{1}$,96965 −	+	33	−407	$\bar{1}$,96558 −	+	36	−414
36	96998 −		33	404	96594 +		38	409
37	97031 +		35	399	96632 +		39	405
38	97066		36	395	96671		40	402
39	97102 −		36	391	96711 −		40	398
40	$\bar{1}$,97138	+	37	−387	$\bar{1}$,96751 +	+	42	−393
41	97175		38	382	96793 −		42	389
42	97213		39	378	96835		43	385
43	97252 −		39	374	96878 +		44	380
44	97291		40	369	96922 +		45	375
45	$\bar{1}$,97331 +	+	41	−364	$\bar{1}$,96967 +	+	46	−371

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	$e = 0{,}08$			$e = 0{,}09$		
v	M	D	D'	M	D	D'
45°	38°,786	+0°,888	−0°,740	38°,046	+0°,875	−0°,732
46	39,674	890	753	38,921+	875	747
47	40,564	891	768	39,796+	878	759
48	41,455+	894	781	40,674	880	773
49	42,349−	895	795	41,554	882	787
50	43,244−	+0,896	−0,808	42,436−	+0,883	−0,800
51	44,140+	899	821	43,319+	886	812
52	45,039	901	834	44,205+	888	825
53	45,940−	902	847	45,093+	890	838
54	46,842	905	859	45,983+	892	851
55	47,747−	+0,906	−0,872	46,875+	+0,895	−0,863
56	48,653	908	883	47,770	896	876
57	49,561+	911	895	48,666+	899	887
58	50,472	912	907	49,565+	901	899
59	51,384+	915	918	50,466+	904	910
60	52,299	+0,917	−0,929	51,370	+0,906	−0,922
61	53,216−	919	940	52,276−	908	933
62	54,135−	921	951	53,184	910	944
63	55,056−	923	962	54,094+	914	954
64	55,979	926	971	55,008−	915	965
65	56,905−	+0,927	−0,982	55,923	+0,918	−0,975
66	57,832+	931	0,991	56,841	921	985
67	58,763−	932	1,001	57,762−	923	0,995
68	59,695	935	010	58,685	926	1,004
69	60,630	937	019	59,611−	928	013
70	61,567	+0,940	−1,028	60,539	+0,932	−1,022
71	62,507−	942	036	61,471+	933	031
72	63,449−	944	045	62,404	937	039
73	64,393	947	052	63,341−	939	047
74	65,340	949	060	64,280−	942	055
75	66,289+	+0,952	−1,067	65,222	+0,945	−1,063
76	67,241+	955	074	66,167−	947	070
77	68,196−	957	082	67,114+	951	077
78	69,153−	959	088	68,065−	953	084
79	70,112	962	094	69,018	956	090
80	71,074+	+0,965	−1,100	69,974+	+0,960	−1,096
81	72,039	968	105	70,934−	962	103
82	73,007−	970	111	71,896−	965	108
83	73,977−	972	116	72,861−	968	113
84	74,949+	976	120	73,829−	971	118
85	75,925−	+0,978	−1,125	74,800	+0,974	−1,123
86	76,903−	981	129	75,774	977	127
87	77,884−	983	133	76,751	980	131
88	78,867	986	136	77,731	983	134
89	79,853+	989	139	78,714+	987	137
90	80,842+	+0,992	−1,141	79,701−	+0,989	−1,141

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	$e = 0{,}08$				$e = 0{,}09$		
v	$\log \frac{r}{a}$		D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}97331+$	+	41	−364	$\bar{1}{,}96967+$	+ 46	−371
46	97372+		42	359	97013	47	366
47	97414		42	354	97060−	47	362
48	97456+		44	349	97107	48	356
49	97500−		43	345	97155+	49	351
50	$\bar{1}{,}97543+$	+	45	−339	$\bar{1}{,}97204+$	+ 50	−346
51	97588		45	334	97254	51	341
52	97633		46	328	97305−	51	336
53	97679		47	323	97356	52	331
54	97726−		47	318	97408	53	325
55	$\bar{1}{,}97773-$	+	48	−312	$\bar{1}{,}97461$	+ 53	−320
56	97821−		48	307	97514+	55	314
57	97869		49	300	97569−	54	309
58	97918		50	295	97623+	56	302
59	97968−		50	289	97679	56	297
60	$\bar{1}{,}98018$	+	51	−283	$\bar{1}{,}97735$	+ 57	−290
61	98069−		51	277	97792	57	285
62	98120		52	271	97849+	59	278
63	98172		52	264	97908−	58	273
64	98224+		53	258	97966+	60	266
65	$\bar{1}{,}98277$	+	54	−251	$\bar{1}{,}98026-$	+ 59	−260
66	98331−		53	246	98085+	61	253
67	98384+		55	238	98146−	61	247
68	98439−		55	232	98207−	61	241
69	98494−		55	226	98268	62	234
70	$\bar{1}{,}98549$	+	56	−219	$\bar{1}{,}98330$	+ 63	−227
71	98605−		56	212	98393−	62	221
72	98661−		56	206	98455+	64	213
73	98717		57	198	98519	64	207
74	98774		57	191	98583−	64	200
75	$\bar{1}{,}98831$	+	58	−184	$\bar{1}{,}98647-$	+ 64	−193
76	98889−		58	178	98711+	65	186
77	98947−		58	171	98776+	66	179
78	99005−		58	163	98842−	65	172
79	99063+		59	156	98907+	66	164
80	$\bar{1}{,}99122$	+	59	−149	$\bar{1}{,}98973+$	+ 67	−157
81	99181		59	141	99040−	66	151
82	99240+		60	134	99106	67	143
83	99300		60	127	99173	67	136
84	99360−		59	120	99240	67	128
85	$\bar{1}{,}99419+$	+	60	−112	$\bar{1}{,}99307+$	+ 68	−120
86	99479+		61	104	99375	68	113
87	99540−		60	97	99443−	68	106
88	99600		61	89	99511−	68	99
89	99661−		60	82	99579−	68	91
90	$\bar{1}{,}99721-$	+	61	− 74	$\bar{1}{,}99647$	+ 68	− 83

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	$e = 0{,}08$			$e = 0{,}09$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
90	80,842+	+0,992	−1,141	79,701−	+0,989	−1,141
91	81,834+	995	144	80,690	993	143
92	82,829	0,997	146	81,683−	995	146
93	83,826+	1,000	148	82,678+	0,999	147
94	84,826+	003	149	83,677	1,002	149
95	85,829+	+1,006	−1,150	84,679	+1,005	−1,150
96	86,835	009	151	85,684+	009	151
97	87,844−	011	151	86,693−	011	153
98	88,855	014	151	87,704	015	152
99	89,869+	018	150	88,719	018	153
100	90,887−	+1,019	−1,150	89,737−	+1,021	−1,152
101	91,906+	023	148	90,758−	024	151
102	92,929+	026	147	91,782	028	150
103	93,955	028	145	92,810−	030	149
104	94,983+	032	143	93,840+	034	146
105	96,015−	+1,034	−1,141	94,874+	+1,037	−1,144
106	97,049	037	138	95,911+	041	141
107	98,086	040	134	96,952	043	138
108	99,126−	042	131	97,995+	047	134
109	100,168+	046	126	99,042+	050	131
110	101,214	+1,048	−1,122	100,092+	+1,053	−1,126
111	102,262	051	117	101,145+	057	121
112	103,313+	054	111	102,202	060	117
113	104,367+	057	105	103,262−	062	112
114	105,424	060	100	104,324+	066	106
115	106,484−	+1,062	−1,094	105,390+	+1,069	−1,099
116	107,546	065	087	106,459+	073	093
117	108,611	068	079	107,532−	075	087
118	109,679	070	072	108,607	079	079
119	110,749+	074	063	109,686−	081	072
120	111,823−	+1,076	−1,056	110,767	+1,085	−1,063
121	112,899−	079	047	111,852	088	055
122	113,978−	081	038	112,940−	090	046
123	115,059	084	029	114,030+	094	036
124	116,143	087	019	115,124+	097	026
125	117,230−	+1,089	−1,009	116,221	+1,100	−1,017
126	118,319	092	0,998	117,321	103	1,006
127	119,411−	094	987	118,424	106	0,996
128	120,505	097	975	119,530−	108	985
129	121,602	100	964	120,638	112	973
130	122,702−	+1,101	−0,952	121,750−	+1,114	−0,962
131	123,803+	105	939	122,864	117	949
132	124,908	107	927	123,981	120	936
133	126,015−	109	914	125,101	123	923
134	127,124	111	900	126,224−	125	910
135	128,235+	+1,114	−0,886	127,349	+1,128	−0,896

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	$e = 0{,}08$			$e = 0{,}09$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}99721$	+ 61	− 74	$\bar{1}{,}99647-$	+ 68	− 83
91	99782	61	67	99715	68	76
92	99843−	60	60	99783+	69	68
93	99903+	61	51	99852	68	61
94	$\bar{1}{,}99964+$	61	44	99920+	69	52
95	0,00025	+ 61	− 36	$\bar{1}{,}99989$	+ 68	− 45
96	00086	61	29	0,00057+	69	37
97	00147−	60	21	00126−	68	30
98	00207+	61	13	00194+	69	22
99	00268	61	− 5	00263−	68	15
100	0,00329−	+ 60	+ 2	0,00331	+ 68	− 7
101	00389+	61	10	00399	68	+ 1
102	00450−	60	17	00467	68	9
103	00510	60	25	00535	68	17
104	00570	60	33	00603	67	24
105	0,00630	+ 60	+ 40	0,00670+	+ 68	+ 32
106	00690−	59	48	00738−	67	39
107	00749	59	56	00805	67	47
108	00808+	59	64	00872−	66	55
109	00867+	59	71	00938+	67	63
110	0,00926	+ 58	+ 79	0,01005−	+ 66	+ 70
111	00984+	59	87	01071−	65	77
112	01043−	57	93	01136+	66	86
113	01100+	58	102	01202−	64	92
114	01158	57	108	01266+	65	101
115	0,01215	+ 57	+116	0,01331	+ 64	+108
116	01272−	56	123	01395	64	115
117	01328	56	131	01459−	63	122
118	01384−	55	138	01522−	62	130
119	01439	55	145	01584+	62	138
120	0,01494	+ 55	+152	0,01646+	+ 62	+145
121	01549−	53	159	01708	61	152
122	01602+	54	167	01769	61	159
123	01656	53	174	01830−	59	166
124	01709	52	180	01889+	60	174
125	0,01761	+ 52	+188	0,01949−	+ 58	+180
126	01813	51	194	02007+	58	187
127	01864	51	201	02065	57	194
128	01915−	50	207	02122+	57	201
129	01965−	49	214	02179	56	207
130	0,02014	+ 49	+221	0,02235	+ 55	+214
131	02063−	47	227	02290	54	221
132	02110+	48	234	02344+	54	227
133	02158−	46	240	02398	53	233
134	02204+	46	247	02451−	51	239
135	0,02250	+ 45	+252	0,02502+	+ 52	+246

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	$e = 0{,}08$			$e = 0{,}09$		
v	M	D	D'	M	D	D'
135°	128°,235+	+1°,114	−0°,886	127°,349	+1°,128	−0°,896
136	129,349+	117	872	128,477	131	882
137	130,466−	118	858	129,608−	133	868
138	131,584	121	843	130,741	136	852
139	132,705−	122	828	131,877	138	837
140	133,827−	+1,125	−0,812	133,015+	+1,141	−0,822
141	134,952−	128	796	134,156	143	806
142	136,080−	129	781	135,299+	146	790
143	137,209	131	764	136,445	148	773
144	138,340	133	747	137,593	150	757
145	139,473+	+1,136	−0,730	138,743	+1,153	−0,739
146	140,609−	137	713	139,896−	154	722
147	141,746−	139	696	141,050+	157	704
148	142,885−	140	678	142,207	159	686
149	144,025+	143	659	143,366	161	668
150	145,168−	+1,144	−0,641	144,527	+1,163	−0,649
151	146,312	146	622	145,690	165	631
152	147,458	147	603	146,855	167	611
153	148,605+	149	583	148,022−	168	592
154	149,754+	151	564	149,190	170	572
155	150,905	+1,152	−0,545	150,360+	+1,172	−0,552
156	152,057	153	525	151,532+	174	532
157	153,210+	155	504	152,706	175	512
158	154,365+	156	484	153,881	177	491
159	155,521+	158	463	155,058−	178	471
160	156,679−	+1,158	−0,443	156,236	+1,179	−0,449
161	157,837+	160	422	157,415+	181	428
162	158,997	161	401	158,596+	182	406
163	160,158	162	380	159,778+	184	385
164	161,320−	162	358	160,962−	184	363
165	162,482+	+1,164	−0,336	162,146	+1,186	−0,341
166	163,646	165	314	163,332−	186	320
167	164,811−	165	293	164,518	187	297
168	165,976	166	271	165,705+	189	275
169	167,142	167	248	166,894−	189	253
170	168,309	+1,167	−0,226	168,083−	+1,189	−0,230
171	169,476	168	204	169,272+	191	207
172	170,644	169	181	170,463−	191	185
173	171,813−	168	159	171,654−	191	162
174	172,981+	170	136	172,845	192	139
175	174,151−	+1,169	−0,114	174,037−	+1,192	−0,116
176	175,320	170	091	175,229	193	093
177	176,490	170	068	176,422−	192	070
178	177,660−	170	046	177,614+	193	046
179	178,830	170	023	178,807	193	023
180	180,000	+1,170	−0,000	180,000	+1,193	−0,000

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	$e = 0{,}08$				$e = 0{,}09$		
v	$\log \frac{r}{a}$		D	D'	$\log \frac{r}{a}$	D	D'
135°	0,02250	+	45	+252	0,02502+	+ 52	+246
136	02295		45	259	02554−	50	252
137	02340−		43	264	02604	49	258
138	02383		43	270	02653	49	264
139	02426−		42	276	02702−	47	269
140	0,02468−	+	41	+281	0,02749+	+ 47	+276
141	02509		40	287	02796	46	281
142	02549		39	293	02842−	44	286
143	02588+		39	298	02886+	44	292
144	02627		38	303	02930	43	297
145	0,02665−	+	36	+308	0,02973−	+ 41	+302
146	02701+		36	313	03014+	41	308
147	02737+		35	318	03055	40	313
148	02772+		34	323	03095	38	317
149	02806+		33	327	03133+	38	322
150	0,02839+	+	32	+332	0,03171	+ 36	+327
151	02871+		32	336	03207+	36	331
152	02903−		30	340	03243−	34	335
153	02933−		29	344	03277	33	339
154	02962		28	348	03310	32	344
155	0,02990	+	27	+352	0,03342	+ 31	+348
156	03017		26	356	03373	30	351
157	03043		25	360	03403−	28	354
158	03068+		24	363	03431	27	358
159	03092+		23	366	03458+	26	362
160	0,03115+	+	22	+369	0,03484+	+ 25	+365
161	03137		21	372	03509+	24	368
162	03158		20	375	03533	22	371
163	03178−		18	377	03555+	22	374
164	03196+		18	381	03577−	19	376
165	0,03214	+	16	+382	0,03596−	+ 19	+379
166	03230+		16	385	03615+	18	381
167	03246−		14	387	03633−	16	383
168	03260		13	389	03649	15	385
169	03273		12	391	03664	13	387
170	0,03285	+	11	+392	0,03677+	+ 13	+389
171	03296		10	394	03690	11	390
172	03306−		8	395	03701	10	391
173	03314+		8	397	03711−	8	392
174	03322−		6	397	03719	7	394
175	0,03328	+	5	+398	0,03726+	+ 6	+395
176	03333		4	399	03732+	5	396
177	03337+		3	400	03737−	3	396
178	03340		2	400	03740	2	396
179	03342		0	400	03742	+ 1	397
180	0,03342+	+	0	+401	0,03743−	− 1	+396

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	$e = 0{,}10$			$e = 0{,}11$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+0,814	−0,000	0,000	+0,797	−0,000
1	0,814	814	017	0,797	797	017
2	1,628+	814	034	1,594	797	034
3	2,442+	815	051	2,391	797	051
4	3,257	814	069	3,188+	797	067
5	4,071+	+0,815	−0,086	3,985−	+0,798	−0,084
6	4,886	815	103	4,783+	798	101
7	5,701	816	120	5,581+	799	118
8	6,517−	815	137	6,380−	798	135
9	7,332+	816	154	7,178+	799	151
10	8,148+	+0,817	−0,171	7,977+	+0,800	−0,168
11	8,965	817	188	8,777	800	185
12	9,782	818	205	9,577	801	202
13	10,600−	818	222	10,378−	801	219
14	11,418−	819	239	11,179	802	235
15	12,237−	+0,819	−0,256	11,981	+0,803	−0,252
16	13,056	820	272	12,784	803	269
17	13,876+	821	289	13,587+	805	285
18	14,697+	822	305	14,392−	805	302
19	15,519	823	322	15,197−	806	318
20	16,342−	+0,823	−0,339	16,003	+0,807	−0,334
21	17,165+	825	355	16,810	808	351
22	17,990−	825	372	17,618	809	367
23	18,815	827	388	18,427	810	383
24	19,642−	827	405	19,237+	812	399
25	20,469+	+0,829	−0,420	20,049−	+0,812	−0,416
26	21,298	830	437	20,861	814	431
27	22,128−	831	453	21,675	815	447
28	22,959	832	469	22,490	816	463
29	23,791	834	485	23,306+	818	478
30	24,625−	+0,835	−0,501	24,124+	+0,819	−0,494
31	25,460−	836	517	24,943+	821	509
32	26,296	838	532	25,764+	822	525
33	27,134	839	548	26,586+	824	540
34	27,973	841	563	27,410+	826	556
35	28,814	+0,842	−0,578	28,236−	+0,827	−0,571
36	29,656	844	593	29,063	829	586
37	30,500	846	608	29,892−	830	601
38	31,346−	847	624	30,722+	833	616
39	32,193	849	638	31,555	834	631
40	33,042	+0,851	−0,653	32,389	+0,836	−0,645
41	33,893−	852	668	33,225+	838	659
42	34,745	855	682	34,063+	840	674
43	35,600−	856	697	34,903+	843	688
44	36,456	858	710	35,746−	844	703
45	37,314	+0,860	−0,724	36,590	+0,846	−0,717

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	$e = 0{,}10$				$e = 0{,}11$			
v	$\log \frac{r}{a}$		D	D'	$\log \frac{r}{a}$		D	D'
0°	$\bar{1}{,}95424+$	+	1	−485	$\bar{1}{,}94939$	+	1	−491
1	95425		2	485	94940−		2	491
2	95427−		3	485	94942−		3	491
3	95430−		3	485	94945		4	490
4	95433		6	484	94949+		6	489
5	$\bar{1}{,}95439+$	+	7	−484	$\bar{1}{,}94955+$	+	8	−489
6	95446		8	483	94963−		8	489
7	95454−		9	483	94971		10	488
8	95463−		10	482	94981		11	487
9	95473		11	481	94992		12	486
10	$\bar{1}{,}95484+$	+	13	−480	$\bar{1}{,}95004+$	+	14	−485
11	95497		14	479	95018		15	484
12	95511−		15	478	95033		16	483
13	95526−		16	477	95049+		18	481
14	95542−		17	475	95067		19	480
15	$\bar{1}{,}95559$	+	18	−473	$\bar{1}{,}95086$	+	20	−479
16	95577+		20	471	95106		21	477
17	95597		21	470	95127+		23	475
18	95618		22	468	95150		24	473
19	95640		23	466	95174		25	471
20	$\bar{1}{,}95663$	+	24	−464	$\bar{1}{,}95199+$	+	27	−469
21	95687		26	461	95226		28	468
22	95713−		26	459	95254−		29	466
23	95739+		28	456	95283−		30	463
24	95767		29	454	95313−		31	461
25	$\bar{1}{,}95796-$	+	30	−452	$\bar{1}{,}95344$	+	33	−458
26	95826−		31	449	95377−		34	455
27	95857−		32	446	95411−		35	453
28	95889		33	443	95446−		36	450
29	95922		34	440	95482		37	446
30	$\bar{1}{,}95956+$	+	36	−437	$\bar{1}{,}95519+$	+	39	−443
31	95992		36	434	95558		40	440
32	96028+		38	430	95598		41	437
33	96066		39	427	95639		42	433
34	96105−		39	424	95681		43	430
35	$\bar{1}{,}96144+$	+	41	−420	$\bar{1}{,}95724+$	+	45	−426
36	96185		42	416	95769		45	423
37	96227−		42	413	95814+		47	418
38	96269+		44	408	95861		48	415
39	96313		45	404	95909		49	411
40	$\bar{1}{,}96358$	+	46	−400	$\bar{1}{,}95958-$	+	50	−407
41	96404−		46	396	96008−		51	403
42	96450+		48	391	96059−		52	399
43	96498		49	387	96111		53	394
44	96547−		49	383	96164		54	390
45	$\bar{1}{,}96596+$	+	51	−378	$\bar{1}{,}96218+$	+	55	−385

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	$e = 0{,}10$			$e = 0{,}11$		
v	M	D	D'	M	D	D'
45°	37°,314	+0°,860	−0°,724	36°,590	+0°,846	−0°,717
46	38,174+	863	738	37,436+	849	730
47	39,037−	864	752	38,285−	851	744
48	39,901	866	765	39,136−	853	758
49	40,767+	869	778	39,989−	855	771
50	41,636	+0,871	−0,792	40,844	+0,858	−0,784
51	42,507−	873	805	41,702−	860	798
52	43,380−	875	818	42,562−	862	810
53	44,255−	877	831	43,424	865	823
54	45,132+	880	843	44,289	868	835
55	46,012	+0,882	−0,855	45,157−	+0,870	−0,848
56	46,894+	885	867	46,027	873	860
57	47,779	887	879	46,900−	875	872
58	48,666+	890	891	47,775	878	884
59	49,556	892	903	48,653	881	895
60	50,448	+0,895	−0,914	49,534	+0,883	−0,907
61	51,343	897	926	50,417+	887	917
62	52,240+	900	936	51,304	889	929
63	53,140+	903	947	52,193	892	940
64	54,043	905	958	53,085+	895	950
65	54,948+	+0,908	−0,968	53,980+	+0,898	−0,961
66	55,856+	911	978	54,878+	902	971
67	56,767+	914	987	55,780−	904	982
68	57,681	917	0,997	56,684	907	0,991
69	58,598	919	1,007	57,591	911	1,000
70	59,517+	+0,923	−1,015	58,502−	+0,913	−1,010
71	60,440+	925	025	59,415	917	019
72	61,365	929	033	60,332	920	028
73	62,294−	931	042	61,252	923	036
74	63,225	934	050	62,175+	927	044
75	64,159+	+0,938	−1,057	63,102	+0,930	−1,052
76	65,097	940	065	64,032	933	060
77	66,037+	944	072	64,965	937	067
78	66,981	947	079	65,902	940	075
79	67,928	950	086	66,842	944	081
80	68,878	+0,953	−1,092	67,786	+0,947	−1,088
81	69,831+	957	098	68,733	951	095
82	70,788	960	104	69,684	954	101
83	71,748	963	110	70,638	958	106
84	72,711	966	115	71,596	962	112
85	73,677+	+0,970	−1,119	72,558−	+0,965	−1,118
86	74,647	973	124	73,523−	969	122
87	75,620	977	128	74,492−	972	127
88	76,597−	980	133	75,464	976	131
89	77,577−	983	137	76,440+	980	134
90	78,560	+0,987	−1,140	77,420+	+0,984	−1,138

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	$e = 0{,}10$			$e = 0{,}11$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}96596+$	+ 51	− 378	$\bar{1}{,}96218+$	+ 55	− 385
46	96647	51	374	96273+	57	380
47	96698+	53	368	96330−	57	376
48	96751−	53	364	96387	58	371
49	96804	54	359	96445	59	366
50	$\bar{1}{,}96858$	+ 55	− 354	$\bar{1}{,}96504+$	+ 60	− 361
51	96913	56	349	96564+	61	356
52	96969	56	344	96625+	62	350
53	97025+	58	338	96687+	63	345
54	97083	58	333	96750+	64	340
55	$\bar{1}{,}97141+$	+ 59	− 327	$\bar{1}{,}96814$	+ 65	− 335
56	97200+	60	321	96879	65	330
57	97260+	61	316	96944+	67	323
58	97321	61	310	97011−	67	318
59	97382+	63	304	97078	68	312
60	$\bar{1}{,}97445-$	+ 62	− 299	$\bar{1}{,}97146$	+ 69	− 307
61	97507+	64	292	97215	70	301
62	97571	64	286	97285−	70	295
63	97635+	65	280	97355	71	289
64	97700+	66	274	97426	72	282
65	$\bar{1}{,}97766$	+ 66	− 268	$\bar{1}{,}97498$	+ 72	− 276
66	97832	67	262	97570+	74	270
67	97899	67	255	97644−	74	264
68	97966+	68	248	97718−	74	258
69	98034+	69	242	97792	75	251
70	$\bar{1}{,}98103$	+ 69	− 236	$\bar{1}{,}97867+$	+ 76	− 244
71	98172	70	229	97943	77	237
72	98242−	70	222	98020−	77	231
73	98312	71	215	98097−	77	225
74	98383−	71	209	98174	78	217
75	$\bar{1}{,}98454-$	+ 71	− 202	$\bar{1}{,}98252$	+ 79	− 210
76	98525+	72	194	98331−	79	204
77	98597+	73	187	98410−	79	197
78	98670	73	181	98489+	80	189
79	98743−	73	174	98569	81	182
80	$\bar{1}{,}98816$	+ 73	− 166	$\bar{1}{,}98650-$	+ 80	− 176
81	98889+	74	159	98730+	81	168
82	98963+	74	152	98811+	82	160
83	99037+	75	144	98893	82	153
84	99112	75	137	98975−	82	146
85	$\bar{1}{,}99187-$	+ 75	− 130	$\bar{1}{,}99057$	+ 82	− 139
86	99262−	75	123	99139+	83	131
87	99337	75	115	99222	83	124
88	99412+	76	107	99305	83	116
89	99488−	76	100	99388	83	109
90	$\bar{1}{,}99564-$	+ 75	− 93	$\bar{1}{,}99471+$	+ 84	− 101

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	$e = 0{,}10$			$e = 0{,}11$		
v	M	D	D'	M	D	D'
90°	78°,560	+0°,987	−1°,140	77°,420+	+0°,984	−1°,138
91	79,547−	990	143	78,404	988	141
92	80,537	994	145	79,392−	991	145
93	81,531−	0,997	148	80,383	995	147
94	82,528	1,001	150	81,378+	0,999	149
95	83,529−	+1,004	−1,152	82,377+	+1,003	−1,151
96	84,533−	007	153	83,380+	007	152
97	85,540+	012	153	84,387+	011	154
98	86,552−	014	154	85,398	015	155
99	87,566+	019	153	86,413−	018	156
100	88,585	+1,022	−1,154	87,431	+1,023	−1,155
101	89,607	025	153	88,454−	026	156
102	90,632+	029	152	89,480	030	155
103	91,661+	033	151	90,510+	034	153
104	92,694	036	150	91,544−	039	152
105	93,730+	+1,040	−1,147	92,583	+1,042	−1,151
106	94,770+	044	145	93,625+	047	148
107	95,814−	047	142	94,672−	050	146
108	96,861	050	139	95,722	054	143
109	97,911+	055	135	96,776	058	140
110	98,966−	+1,058	−1,132	97,834+	+1,062	−1,136
111	100,024−	061	128	98,896+	067	132
112	101,085	065	122	99,963−	070	128
113	102,150	068	117	101,033−	074	123
114	103,218+	073	111	102,107−	078	118
115	104,291−	+1,075	−1,106	103,185−	+1,082	−1,112
116	105,366+	079	099	104,267−	086	106
117	106,445+	083	092	105,353−	089	100
118	107,528	086	086	106,442+	094	092
119	108,614+	090	078	107,536	098	085
120	109,704	+1,093	−1,070	108,634−	+1,101	−1,078
121	110,797+	097	062	109,735	105	070
122	111,894	100	054	110,840+	110	061
123	112,994	104	044	111,950−	113	053
124	114,098−	106	035	113,063−	116	044
125	115,204+	+1,111	−1,025	114,179+	+1,121	−1,033
126	116,315−	113	015	115,300−	124	024
127	117,428	117	1,004	116,424	128	013
128	118,545	120	0,995	117,552	131	1,002
129	119,665+	123	982	118,683+	136	0,990
130	120,788−	+1,127	−0,969	119,819−	+1,138	−0,980
131	121,915+	130	958	120,957+	143	967
132	123,045	133	945	122,100−	146	955
133	124,178	136	932	123,246−	149	942
134	125,314	139	919	124,395	153	929
135	126,453	+1,142	−0,905	125,548	+1,156	−0,915

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	$e = 0{,}10$			$e = 0{,}11$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}99564-$	+ 75	− 93	$\bar{1}{,}99471+$	+ 84	− 101
91	99639+	76	84	99555−	83	94
92	99715+	76	77	99638+	84	86
93	99791+	77	69	99722	84	78
94	99868−	76	62	99806	84	71
95	$\bar{1}{,}99944-$	+ 76	− 54	$\bar{1}{,}99890-$	+ 84	− 63
96	0,00020	76	46	$\bar{1}{,}99974-$	83	56
97	00096	76	39	0,00057+	84	47
98	00172	76	31	00141+	84	39
99	00248+	76	23	00225	84	32
100	0,00324+	+ 76	− 15	0,00309	+ 84	− 24
101	00400	76	− 7	00393−	83	17
102	00476	76	0	00476	83	− 9
103	00552−	75	+ 7	00559+	84	0
104	00627	75	16	00643−	83	+ 7
105	0,00702+	+ 75	+ 24	0,00726−	+ 82	+ 14
106	00777+	75	31	00808+	83	23
107	00852	75	39	00891	82	30
108	00927−	74	46	00973+	82	38
109	01001	74	54	01055	82	46
110	0,01075	+ 73	+ 62	0,01137−	+ 81	+ 53
111	01148+	74	70	01218	81	61
112	01222−	72	77	01299	80	69
113	01294+	73	85	01379+	80	77
114	01367	72	92	01459	80	84
115	0,01439	+ 71	+100	0,01539−	+ 78	+ 91
116	01510+	71	107	01617−	79	100
117	01581+	71	115	01696	78	107
118	01652	70	122	01774	77	114
119	01722−	69	129	01851+	77	122
120	0,01791	+ 69	+137	0,01928	+ 76	+129
121	01860	68	144	02004	76	137
122	01928	68	152	02080−	74	143
123	01996−	67	158	02154+	74	151
124	02063−	66	165	02228+	74	159
125	0,02129	+ 65	+173	0,02302−	+ 72	+165
126	02194+	65	180	02374	72	173
127	02259	64	187	02446	71	179
128	02323	63	194	02517−	70	186
129	02386+	63	201	02587	69	193
130	0,02449	+ 62	+207	0,02656	+ 68	+200
131	02511−	60	213	02724+	68	207
132	02571+	60	221	02792−	66	213
133	02631+	59	227	02858	65	220
134	02690+	58	233	02923+	65	227
135	0,02748+	+ 58	+240	0,02988	+ 63	+233

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	e = 0,10			e = 0,11		
v	M	D	D'	M	D	D'
135°	126°,453	+1°,142	−0°,905	125°,548	+1°,156	−0°,915
136	127,595+	145	891	126,704	160	901
137	128,740+	149	876	127,864−	163	887
138	129,889−	151	862	129,027−	166	872
139	131,040−	153	847	130,193−	169	857
140	132,193+	+1,157	−0,831	131,362	+1,172	−0,841
141	133,350	159	816	132,534+	176	825
142	134,509+	163	799	133,710	179	809
143	135,672−	164	783	134,889−	181	793
144	136,836+	168	766	136,070+	185	775
145	138,004−	+1,170	−0,749	137,255	+1,187	−0,758
146	139,174−	172	732	138,442+	191	740
147	140,346	175	713	139,633−	193	723
148	141,521	177	695	140,826−	195	705
149	142,698	180	677	142,021+	198	686
150	143,878−	+1,181	−0,659	143,219−	+1,201	−0,667
151	145,059+	185	639	144,420+	204	648
152	146,244+	186	620	145,624−	205	629
153	147,430−	188	601	146,829+	208	608
154	148,618−	190	581	148,037+	211	588
155	149,808	+1,192	−0,560	149,248−	+1,212	−0,569
156	151,000	194	540	150,460+	215	547
157	152,194	196	519	151,675	216	527
158	153,390	197	499	152,891+	219	505
159	154,587+	200	477	154,110	220	485
160	155,787−	+1,200	−0,457	155,330+	+1,223	−0,463
161	156,987+	203	434	156,553−	224	442
162	158,190−	203	413	157,777−	225	420
163	159,393+	206	391	159,002	227	397
164	160,599+	206	370	160,229+	229	374
165	161,805−	+1,207	−0,347	161,458	+1,230	−0,352
166	163,012	209	324	162,688−	231	330
167	164,221−	209	302	163,919	232	307
168	165,430+	211	279	165,151+	234	283
169	166,641	212	256	166,385−	234	261
170	167,853−	+1,212	−0,234	167,619+	+1,236	−0,237
171	169,065	213	210	168,855−	236	214
172	170,278+	214	187	170,091	237	190
173	171,492	214	164	171,328	238	167
174	172,706+	215	140	172,566−	238	143
175	173,921+	+1,215	−0,117	173,804	+1,239	−0,119
176	175,136+	216	093	175,043−	239	096
177	176,352	216	070	176,282−	239	072
178	177,568	216	047	177,521	239	048
179	178,784	216	024	178,760+	240	024
180	180,000	+1,216	−0,000	180,000	+1,240	−0,000

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	$e = 0{,}10$			$e = 0{,}11$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,02748+	+ 58	+240	0,02988	+ 63	+233
136	02806−	56	245	03051+	63	240
137	02862	55	252	03114−	61	245
138	02917	54	258	03175	60	252
139	02971+	54	264	03235+	59	258
140	0,03025−	+ 52	+269	0,03294+	+ 58	+264
141	03077	51	275	03352+	57	270
142	03128	50	281	03409	56	275
143	03178+	49	287	03465−	54	280
144	03227+	48	292	03519	53	286
145	0,03275+	+ 47	+297	0,03572+	+ 52	+292
146	03322	46	302	03624	51	297
147	03368−	44	307	03675	49	302
148	03412	43	312	03724+	48	307
149	03455+	43	317	03772+	47	312
150	0,03498−	+ 40	+321	0,03819	+ 45	+317
151	03538+	40	326	03864+	44	322
152	03578	38	330	03908+	43	326
153	03616+	38	335	03951	41	330
154	03654−	36	338	03992+	40	335
155	0,03690−	+ 34	+342	0,04032+	+ 39	+338
156	03724	33	347	04071−	37	342
157	03757+	32	351	04108−	35	346
158	03789+	31	354	04143	34	350
159	03820	29	357	04177+	33	353
160	0,03849+	+ 28	+361	0,04210−	+ 31	+356
161	03877	27	364	04241	29	359
162	03904−	25	366	04270+	28	363
163	03929	24	369	04298+	27	366
164	03953−	22	372	04325	25	368
165	0,03975	+ 21	+375	0,04350−	+ 23	+370
166	03996	20	377	04373	22	373
167	04016−	18	379	04395	20	375
168	04034	17	381	04415	19	378
169	04051−	15	383	04434−	17	379
170	0,04066	+ 14	+385	0,04451	+ 15	+381
171	04080	12	386	04466+	14	383
172	04092+	11	388	04480	12	384
173	04103+	10	389	04492+	11	386
174	04113	8	390	04503	9	386
175	0,04121	+ 7	+391	0,04512	+ 7	+387
176	04128−	5	391	04519+	6	388
177	04133−	3	392	04525	4	389
178	04136+	3	393	04529	2	389
179	04139−	0	392	04531+	+ 1	390
180	0,04139+	+ 0	+393	0,04532+	− 1	+390

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	$e = 0{,}12$			$e = 0{,}13$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+0,780	−0,000	0,000	+0,763	−0,000
1	0,780	780	017	0,763+	764	016
2	1,560	780	033	1,527	763	033
3	2,340+	781	050	2,290+	764	049
4	3,121−	780	067	3,054	764	066
5	3,901+	+0,781	−0,083	3,818	+0,764	−0,082
6	4,682	781	100	4,582+	765	098
7	5,463	782	116	5,347−	765	115
8	6,245−	782	133	6,112−	765	131
9	7,027−	782	150	6,877	766	148
10	7,809	+0,783	−0,166	7,643−	+0,766	−0,164
11	8,592−	783	183	8,409	767	180
12	9,375	784	199	9,176	768	196
13	10,159	785	215	9,944−	768	213
14	10,944−	785	232	10,712−	769	229
15	11,729	+0,786	−0,248	11,481−	+0,770	−0,245
16	12,515+	787	264	12,251−	770	262
17	13,302+	788	281	13,021+	772	277
18	14,090	789	297	13,793	772	293
19	14,879	790	314	14,565+	774	309
20	15,669−	+0,790	−0,330	15,339	+0,775	−0,325
21	16,459+	792	345	16,114−	775	342
22	17,251	793	362	16,889+	777	357
23	18,044	794	378	17,666+	778	373
24	18,838	795	394	18,444+	780	388
25	19,633+	+0,797	−0,409	19,224	+0,781	−0,404
26	20,430	798	425	20,005−	782	420
27	21,228	799	441	20,787−	783	436
28	22,027+	801	457	21,570+	786	450
29	22,828	802	472	22,356−	786	467
30	23,630	+0,804	−0,488	23,142+	+0,788	−0,481
31	24,434−	805	504	23,930+	790	496
32	25,239	807	519	24,720+	792	512
33	26,046	808	534	25,512	793	527
34	26,854+	811	549	26,305+	796	542
35	27,665−	+0,812	−0,564	27,101−	+0,797	−0,557
36	28,477	814	579	27,898	799	572
37	29,291−	815	594	28,697	801	587
38	30,106+	818	608	29,498	803	602
39	30,924	820	623	30,301	805	616
40	31,744	+0,822	−0,638	31,106	+0,807	−0,630
41	32,566−	823	653	31,913+	810	644
42	33,389+	826	666	32,723−	811	659
43	34,215	828	681	33,534+	814	673
44	35,043+	830	695	34,348+	817	687
45	35,873+	+0,833	−0,708	35,165	+0,819	−0,701

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	$e = 0{,}12$				$e = 0{,}13$			
v	$\log \frac{r}{a}$		D	D'	$\log \frac{r}{a}$		D	D'
0°	$\bar{1}$,94448+	+	1	−496	$\bar{1}$,93952	+	1	−502
1	94449		2	496	93953−		2	502
2	94451		4	496	93955		4	502
3	94455−		5	496	93959−		5	502
4	94460−		6	496	93964		7	501
5	$\bar{1}$,94466	+	8	−495	$\bar{1}$,93971	+	8	−501
6	94474−		9	495	93979+		10	500
7	94483		11	494	93989		12	499
8	94494−		12	493	94001−		12	499
9	94506−		13	493	94013+		15	497
10	$\bar{1}$,94519	+	15	−491	$\bar{1}$,94028	+	16	−497
11	94534		16	490	94044		17	496
12	94550		18	489	94061+		19	494
13	94568−		19	488	94080		21	493
14	94587−		20	486	94101−		22	492
15	$\bar{1}$,94607	+	22	−484	$\bar{1}$,94123−	+	23	−491
16	94629		23	483	94146		25	489
17	94652		25	481	94171−		26	487
18	94677−		26	480	94197		28	485
19	94703−		27	478	94225		29	484
20	$\bar{1}$,94730	+	28	−476	$\bar{1}$,94254+	+	31	−481
21	94758+		30	473	94285		32	479
22	94788+		32	471	94317+		34	477
23	94820−		32	469	94351		35	475
24	94852+		34	466	94386		37	473
25	$\bar{1}$,94886+	+	36	−463	$\bar{1}$,94423−	+	38	−471
26	94922−		36	461	94461−		39	468
27	94958+		38	458	94500		41	465
28	94996+		40	455	94541−		42	462
29	95036−		40	453	94583		44	459
30	$\bar{1}$,95076	+	42	−449	$\bar{1}$,94627−	+	44	−457
31	95118		43	447	94671+		47	453
32	95161		45	443	94718		48	450
33	95206−		45	440	94766−		49	447
34	95251		47	436	94815−		50	444
35	$\bar{1}$,95298	+	48	−433	$\bar{1}$,94865	+	52	−440
36	95346		50	429	94917−		53	436
37	95396−		50	426	94970		54	433
38	95446		52	422	95024+		56	429
39	95498		53	418	95080		57	425
40	$\bar{1}$,95551−	+	54	−414	$\bar{1}$,95137	+	58	−421
41	95605		55	410	95195		60	417
42	95660+		57	405	95255−		60	413
43	95717−		57	402	95315+		62	408
44	95774+		59	397	95377+		64	404
45	$\bar{1}$,95833	+	60	−392	$\bar{1}$,95441−	+	64	−400

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	$e = 0{,}12$			$e = 0{,}13$		
v	M	D	D'	M	D	D'
45°	35°,873+	+0°,833	−0°,708	35°,165	+0°,819	−0°,701
46	36,706	835	722	35,984−	821	715
47	37,541	837	736	36,805−	824	729
48	38,378	840	749	37,629−	826	742
49	39,218−	842	763	38,455−	829	755
50	40,060	+0,844	−0,776	39,284−	+0,831	−0,769
51	40,904+	848	789	40,115+	834	781
52	41,752−	849	803	40,949+	838	794
53	42,601+	853	814	41,787−	839	808
54	43,454	855	828	42,626+	843	819
55	44,309	+0,858	−0,840	43,469	+0,846	−0,832
56	45,167	861	852	44,315−	848	845
57	46,028−	863	865	45,163+	852	856
58	46,891	867	876	46,015	855	869
59	47,758−	869	888	46,870−	857	881
60	48,627	+0,873	−0,900	47,727+	+0,861	−0,891
61	49,500+	875	912	48,588+	865	903
62	50,375−	878	922	49,453−	867	915
63	51,253	882	933	50,320+	871	925
64	52,135−	884	944	51,191	874	937
65	53,019+	+0,888	−0,954	52,065	+0,878	−0,947
66	53,907+	891	964	52,943−	881	958
67	54,798+	895	974	53,824	884	968
68	55,693	898	985	54,708+	889	978
69	56,591−	901	0,994	55,597−	891	988
70	57,492−	+0,904	−1,004	56,488+	+0,896	−0,997
71	58,396+	908	012	57,384−	899	1,007
72	59,304+	912	021	58,283−	902	016
73	60,216	915	031	59,185+	907	024
74	61,131	919	039	60,092	910	033
75	62,050−	+0,922	−1,048	61,002+	+0,915	−1,041
76	62,972−	926	055	61,917−	918	050
77	63,898−	929	063	62,835	922	058
78	64,827+	934	070	63,757	926	066
79	65,761−	937	078	64,683	930	073
80	66,698−	+0,940	−1,085	65,613+	+0,935	−1,080
81	67,638+	945	090	66,548−	938	087
82	68,583	949	097	67,486	942	094
83	69,532−	952	104	68,428+	947	099
84	70,484	956	109	69,375	951	106
85	71,440+	+0,961	−1,114	70,326	+0,955	−1,111
86	72,401−	964	120	71,281	960	117
87	73,365	968	124	72,241−	963	122
88	74,333+	973	129	73,204+	969	126
89	75,306−	976	133	74,173−	972	132
90	76,282	+0,981	−1,137	75,145	+0,977	−1,135

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	$e = 0{,}12$			$e = 0{,}13$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}95833$	+ 60	−392	$\bar{1}{,}95441-$	+ 64	−400
46	95893	61	388	95505	66	395
47	95954−	62	383	95571−	66	391
48	96016	63	379	95637+	68	386
49	96079	64	374	95705+	69	381
50	$\bar{1}{,}96143$	+ 65	−369	$\bar{1}{,}95774+$	+ 71	−376
51	96208+	67	363	95845−	71	372
52	96275−	67	359	95916	72	366
53	96342−	68	354	95988+	74	361
54	96410	69	348	96062	75	356
55	$\bar{1}{,}96479+$	+ 70	−342	$\bar{1}{,}96137-$	+ 75	−351
56	96549+	72	337	96212	77	345
57	96621−	72	332	96289	77	340
58	96693−	73	327	96366+	79	334
59	96766−	73	321	96445	80	328
60	$\bar{1}{,}96839+$	+ 75	−314	$\bar{1}{,}96525$	+ 80	−323
61	96914+	76	309	96605+	82	317
62	96990	76	303	96687	82	311
63	97066+	78	297	96769+	84	305
64	97144−	78	291	96853−	84	299
65	$\bar{1}{,}97222-$	+ 78	−285	$\bar{1}{,}96937$	+ 85	−293
66	97300+	80	278	97022	86	287
67	97380	80	272	97108	87	281
68	97460+	81	265	97195−	87	275
69	97541+	82	259	97282+	88	268
70	$\bar{1}{,}97623+$	+ 83	−253	$\bar{1}{,}97370+$	+ 90	−261
71	97706−	83	246	97460−	89	255
72	97789−	83	240	97549+	91	248
73	97872+	85	232	97640−	91	242
74	97957	85	226	97731	92	235
75	$\bar{1}{,}98042-$	+ 85	−219	$\bar{1}{,}97823-$	+ 92	−228
76	98127+	86	212	97915	93	221
77	98213+	87	205	98008	94	214
78	98300	87	198	98102−	94	208
79	98387	87	191	98196−	94	201
80	$\bar{1}{,}98474+$	+ 88	−184	$\bar{1}{,}98290+$	+ 95	−193
81	98562+	89	177	98385+	96	186
82	98651−	89	170	98481	96	179
83	98740−	89	163	98577	97	171
84	98829−	89	155	98674−	96	165
85	$\bar{1}{,}98918+$	+ 90	−148	$\bar{1}{,}98770+$	+ 98	−156
86	99008	90	140	98868−	97	150
87	99098	91	133	98965+	98	142
88	99189−	90	126	99063	98	134
89	99279+	91	118	99161+	99	127
90	$\bar{1}{,}99370$	+ 91	−110	$\bar{1}{,}99260-$	+ 98	−120

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	$e = 0,12$			$e = 0,13$		
v	M	D	D'	M	D	D'
90°	76°,282	+0°,981	−1°,137	75°,145	+0°,977	−1°,135
91	77,263−	984	141	76,122	982	139
92	78,247+	989	143	77,104−	985	143
93	79,236	993	147	78,089+	991	146
94	80,229	0,997	149	79,080	995	149
95	81,226+	+1,002	−1,151	80,075	+0,999	−1,152
96	82,228−	005	154	81,074+	1,004	153
97	83,233+	010	155	82,078+	009	155
98	84,243	014	156	83,087	013	157
99	85,257+	019	157	84,100+	018	158
100	86,276−	+1,022	−1,158	85,118+	+1,023	−1,158
101	87,298+	027	157	86,141	027	159
102	88,325+	032	157	87,168+	032	159
103	89,357−	035	157	88,200+	037	158
104	90,392+	040	155	89,237	042	158
105	91,432+	+1,045	−1,153	90,279−	+1,046	−1,157
106	92,477	049	152	91,325	051	156
107	93,526−	053	150	92,376−	055	154
108	94,579−	057	148	93,431+	061	151
109	95,636+	062	144	94,492	065	149
110	96,698	+1,066	−1,141	95,557	+1,070	−1,146
111	97,764+	071	137	96,627	075	142
112	98,835	075	133	97,702−	079	139
113	99,910−	079	129	98,781+	084	134
114	100,989	084	124	99,865+	089	129
115	102,073−	+1,088	−1,119	100,954+	+1,094	−1,124
116	103,161−	092	113	102,048+	099	119
117	104,253	097	106	103,147−	103	113
118	105,350−	101	100	104,250	108	107
119	106,451−	105	093	105,358	113	100
120	107,556	+1,109	−1,085	106,471−	+1,117	−1,093
121	108,665+	114	077	107,588	122	085
122	109,779	118	069	108,710	127	077
123	110,897	122	060	109,837−	131	069
124	112,019+	127	051	110,968	136	060
125	113,146−	+1,130	−1,042	112,104−	+1,140	−1,051
126	114,276+	135	032	113,244	145	041
127	115,411	139	022	114,389	150	030
128	116,550−	143	011	115,539−	154	020
129	117,693−	146	1,000	116,693−	158	1,009
130	118,839+	+1,151	−0,988	117,851	+1,163	−0,998
131	119,990+	155	976	119,014	167	986
132	121,145	159	964	120,181	172	974
133	122,304	162	951	121,353−	175	961
134	123,466+	167	938	122,528+	180	948
135	124,633	+1,170	−0,925	123,708+	+1,184	−0,934

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	$e = 0{,}12$			$e = 0{,}13$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}99370$	+ 91	−110	$\bar{1}{,}99260-$	+ 98	−120
91	99461	91	103	99358+	99	111
92	99552+	92	95	99457+	99	104
93	99644−	91	88	99556+	99	96
94	99735	92	80	99655+	100	88
95	$\bar{1}{,}99827-$	+ 91	− 72	$\bar{1}{,}99755-$	+ 99	− 81
96	$\bar{1}{,}99918+$	92	64	99854	99	73
97	0,00010	92	57	$\bar{1}{,}99953+$	100	65
98	00102−	91	49	0,00053−	99	58
99	00193	92	41	00152	99	50
100	0,00285−	+ 91	− 34	0,00251+	+100	− 42
101	00376	91	25	00351−	99	35
102	00467+	92	17	00450−	99	27
103	00559−	91	10	00549−	99	19
104	00650−	90	− 2	00648−	98	11
105	0,00740+	+ 91	+ 6	0,00746	+ 99	− 3
106	00831	90	14	00845−	98	+ 4
107	00921	90	22	00943−	97	12
108	01011	90	29	01040+	98	21
109	01101	89	37	01138	97	28
110	0,01190	+ 89	+ 45	0,01235	+ 97	+ 36
111	01279	89	53	01332−	96	44
112	01368−	88	60	01428	96	52
113	01456−	87	68	01524	95	59
114	01543+	87	76	01619	95	68
115	0,01630+	+ 87	+ 84	0,01714	+ 94	+ 75
116	01717	86	91	01808	94	83
117	01803	85	99	01902−	93	90
118	01888+	85	107	01995−	92	98
119	01973	84	114	02087	92	106
120	0,02057+	+ 84	+122	0,02179−	+ 91	+113
121	02141−	82	129	02270−	90	120
122	02223+	82	137	02360−	89	128
123	02305+	82	144	02449	89	136
124	02387−	80	151	02538−	87	142
125	0,02467	+ 80	+158	0,02625	+ 87	+151
126	02547−	78	165	02712	86	158
127	02625+	78	173	02798−	85	165
128	02703+	77	180	02883−	84	172
129	02780+	76	187	02967−	82	179
130	0,02856+	+ 75	+193	0,03049+	+ 82	+187
131	02931+	74	200	03131+	81	194
132	03005+	73	207	03212	80	200
133	03078+	72	214	03292−	78	207
134	03150	71	220	03370+	78	214
135	0,03221	+ 70	+227	0,03448−	+ 76	+220

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	$e = 0{,}12$			$e = 0{,}13$		
v	M	D	D'	M	D	D'
135°	124°,633	+1°,170	−0°,925	123°,708+	+1°,184	−0°,934
136	125,803	174	911	124,892+	189	920
137	126,977	178	896	126,081−	192	906
138	128,155−	181	882	127,273	197	891
139	129,336	185	866	128,470−	200	877
140	130,521	+1,188	−0,851	129,670	+1,204	−0,861
141	131,709	192	835	130,874	208	845
142	132,901	195	819	132,082	212	829
143	134,096+	199	802	133,294	216	812
144	135,295−	202	785	134,510−	219	796
145	136,497−	+1,205	−0,768	135,729−	+1,222	−0,778
146	137,702−	208	751	136,951+	227	760
147	138,910	211	732	138,178−	229	742
148	140,121	214	714	139,407+	233	723
149	141,335+	217	695	140,640	236	704
150	142,552+	+1,220	−0,676	141,876+	+1,240	−0,685
151	143,772+	223	656	143,116−	242	666
152	144,995+	226	637	144,358	245	646
153	146,221−	228	618	145,603+	249	626
154	147,449	230	597	146,852	251	606
155	148,679+	+1,234	−0,576	148,103	+1,254	−0,585
156	149,913−	235	556	149,357	256	564
157	151,148	238	535	150,613+	259	542
158	152,386−	239	514	151,872+	262	521
159	153,625+	242	491	153,134−	264	499
160	154,867+	+1,244	−0,469	154,398−	+1,266	−0,478
161	156,111+	246	447	155,664−	268	455
162	157,357+	248	425	156,932−	270	432
163	158,605	250	403	158,202	272	410
164	159,855−	251	381	159,474	274	386
165	161,106−	+1,252	−0,358	160,748	+1,276	−0,363
166	162,358+	254	334	162,024−	277	340
167	163,612+	256	311	163,301	279	316
168	164,868−	256	288	164,580−	280	293
169	166,124+	258	264	165,860−	281	269
170	167,382	+1,259	−0,241	167,141	+1,283	−0,245
171	168,641	260	217	168,424−	283	221
172	169,901−	260	194	169,707+	285	196
173	171,161+	262	169	170,992	285	172
174	172,423−	262	146	172,277+	286	147
175	173,685−	+1,262	−0,122	173,563+	+1,287	−0,123
176	174,947	263	097	174,850	287	099
177	176,210	263	073	176,137	288	074
178	177,473	263	048	177,425−	287	050
179	178,736+	264	024	178,712	288	024
180	180,000	+1,264	−0,000	180,000	+1,288	−0,000

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	$e = 0{,}12$			$e = 0{,}13$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,03221	+ 70	+227	0,03448 −	+ 76	+220
136	03291 −	68	233	03524 −	75	226
137	03359 +	68	240	03599 −	73	233
138	03427 −	66	245	03672	73	239
139	03493	65	252	03745 −	71	245
140	0,03558	+ 64	+258	0,03816 −	+ 69	+251
141	03622 −	62	263	03885 +	68	258
142	03684	61	269	03953 +	67	264
143	03745 +	60	275	04020 +	66	270
144	03805 +	59	281	04086	64	274
145	0,03864 −	+ 57	+286	0,04150	+ 62	+280
146	03921	56	291	04212 +	61	286
147	03977 −	54	296	04273 +	60	292
148	04031	53	302	04333 −	58	296
149	04084	52	307	04391 −	56	301
150	0,04136 −	+ 50	+311	0,04447	+ 55	+306
151	04186 −	48	316	04502 −	53	311
152	04234	47	321	04555 −	51	316
153	04281	46	325	04606 +	50	321
154	04327 −	43	329	04656	48	325
155	0,04370 +	+ 43	+334	0,04704	+ 46	+329
156	04413	41	337	04750 +	45	334
157	04454 −	39	341	04795	43	337
158	04493 −	37	345	04838	41	341
159	04530	36	349	04879	39	344
160	0,04566	+ 34	+352	0,04918 +	+ 38	+348
161	04600 +	33	356	04956 −	35	351
162	04633	31	358	04991 +	34	355
163	04664 −	29	361	05025 +	32	358
164	04693	27	364	05057	30	360
165	0,04720 +	+ 26	+367	0,05087 +	+ 29	+363
166	04746 +	24	370	05116 −	26	365
167	04770 +	23	372	05142	24	368
168	04793 −	20	373	05166 +	23	370
169	04813	19	376	05189 −	20	372
170	0,04832	+ 17	+377	0,05209 +	+ 19	+374
171	04849	15	379	05228	17	376
172	04864	14	381	05245 −	15	377
173	04878 −	11	382	05260 −	12	378
174	04889 +	10	383	05272 +	11	380
175	0,04899 +	+ 8	+384	0,05283	+ 9	+381
176	04907 +	7	385	05292	7	381
177	04914 −	4	385	05299	5	382
178	04918	3	386	05304	3	382
179	04921	+ 1	386	05307	+ 1	382
180	0,04922	− 1	+386	0,05308	− 1	+382

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	$e = 0,14$			$e = 0,15$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+0,747	−0,000	0,000	+0,731	−0,000
1	0,747	747	016	0,731−	731	016
2	1,494	747	032	1,462−	731	032
3	2,241	747	048	2,193−	731	048
4	2,988+	748	064	2,924−	731	064
5	3,736	+0,748	−0,081	3,655	+0,732	−0,080
6	4,484−	748	097	4,387−	732	096
7	5,232	749	113	5,119−	732	112
8	5,981+	748	130	5,851	733	127
9	6,729+	750	145	6,584	733	143
10	7,479	+0,750	−0,162	7,317+	+0,734	−0,159
11	8,229	751	178	8,051+	735	175
12	8,980−	751	194	8,786	735	191
13	9,731	752	210	9,521+	736	207
14	10,483	753	226	10,257+	737	222
15	11,236−	+0,753	−0,242	10,994+	+0,738	−0,238
16	11,989+	755	257	11,732	739	254
17	12,744	756	273	12,471−	739	270
18	13,500−	756	290	13,210+	741	285
19	14,256	758	305	13,951	742	301
20	15,014−	+0,758	−0,321	14,693	+0,743	−0,317
21	15,772+	760	336	15,436	744	332
22	16,532+	761	352	16,180	746	347
23	17,293+	763	367	16,926−	746	363
24	18,056	764	384	17,672+	749	378
25	18,820−	+0,765	−0,399	18,421−	+0,749	−0,394
26	19,585−	766	415	19,170+	752	409
27	20,351+	769	429	19,922−	752	425
28	21,120−	769	446	20,674+	755	439
29	21,889+	772	460	21,429	756	455
30	22,661−	+0,773	−0,476	22,185	+0,758	−0,470
31	23,434−	774	491	22,943	760	485
32	24,208+	777	505	23,703−	761	500
33	24,985	778	521	24,464	764	514
34	25,763+	781	535	25,228−	765	529
35	26,544−	+0,782	−0,551	25,993	+0,768	−0,544
36	27,326−	784	565	26,761−	769	559
37	28,110	786	580	27,530+	772	573
38	28,896+	789	594	28,302	774	587
39	29,685	791	609	29,076	777	602
40	30,476−	+0,793	−0,623	29,853+	+0,778	−0,616
41	31,269−	795	638	30,631	781	630
42	32,064−	797	652	31,412+	784	644
43	32,861+	800	665	32,196−	786	658
44	33,661+	803	679	32,982	788	672
45	34,464	+0,805	−0,694	33,770+	+0,792	−0,685

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	$e = 0,14$				$e = 0,15$			
v	$\log \frac{r}{a}$		D	D'	$\log \frac{r}{a}$		D	D'
0°	$\bar{1},93450$	+	1	−508	$\bar{1},92942$	+	1	−514
1	93451 −		2	508	92943 −		2	514
2	93453		4	508	92945 +		5	513
3	93457		6	507	92950 −		6	514
4	93463		7	507	92956 −		8	513
5	$\bar{1},93470$	+	9	−506	$\bar{1},92964$ +	+	9	−513
6	93479		11	506	92973		11	512
7	93490 −		12	506	92984		13	511
8	93502 −		14	505	92997		15	511
9	93516 −		15	504	93012 −		16	510
10	$\bar{1},93531$	+	17	−503	$\bar{1},93028$	+	18	−509
11	93548		19	502	93046		20	508
12	93567 −		20	501	93066		21	507
13	93587 −		22	500	93087 +		23	505
14	93609 −		23	499	93110 +		25	504
15	$\bar{1},93632$	+	25	−497	$\bar{1},93135$ +	+	27	−502
16	93657		27	495	93162		28	501
17	93684 −		28	494	93190		30	500
18	93712 −		29	492	93220		32	498
19	93741 +		32	489	93252 −		33	496
20	$\bar{1},93773$ −	+	33	−488	$\bar{1},93285$	+	35	−494
21	93806 −		34	486	93320		36	492
22	93840		36	484	93356 +		39	490
23	93876		37	481	93395 −		39	488
24	93913 +		39	479	93434 +		42	485
25	$\bar{1},93952$ +	+	41	−476	$\bar{1},93476$	+	43	−483
26	93993		42	474	93519		45	481
27	94035		44	471	93564 −		46	478
28	94079 −		45	469	93610		48	475
29	94124 −		46	466	93658		50	472
30	$\bar{1},94170$ +	+	48	−462	$\bar{1},93708$ −	+	51	−470
31	94218 +		50	459	93759 −		52	467
32	94268		51	457	93811 +		55	463
33	94319		52	453	93866 −		55	461
34	94371 +		54	450	93921 +		58	457
35	$\bar{1},94425$ +	+	56	−446	$\bar{1},93979$ −	+	58	−454
36	94481 −		56	444	94037 +		61	450
37	94537 −		58	439	94098		62	447
38	94595 +		60	435	94160 −		63	443
39	94655		61	432	94223		65	439
40	$\bar{1},94716$	+	62	−428	$\bar{1},94288$	+	66	−435
41	94778 +		64	424	94354		68	431
42	94842		65	420	94422		69	428
43	94907		66	416	94491		71	423
44	94973		68	411	94562 −		72	419
45	$\bar{1},95041$ −	+	69	−407	$\bar{1},94634$ −	+	73	−415

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	$e = 0,14$			$e = 0,15$		
v	M	D	D'	M	D	D'
45°	34°,464	+0°,805	−0°,694	33°,770+	+0°,792	−0°,685
46	35,269	807	707	34,562−	794	700
47	36,076+	811	720	35,356	797	713
48	36,887−	813	734	36,153−	799	727
49	37,700−	815	748	36,952	803	740
50	38,515+	+0,819	−0,760	37,755−	+0,805	−0,753
51	39,334−	821	774	38,560	809	766
52	40,155	824	786	39,369−	811	779
53	40,979+	828	799	40,180	815	792
54	41,807−	830	812	40,995−	817	805
55	42,637	+0,833	−0,825	41,812+	+0,821	−0,817
56	43,470+	837	837	42,633+	825	829
57	44,307−	839	849	43,458−	827	842
58	45,146+	843	861	44,285+	831	853
59	45,989+	847	873	45,116+	835	865
60	46,836−	+0,849	−0,885	45,951	+0,838	−0,877
61	47,685	853	896	46,789	842	889
62	48,538	857	907	47,631−	845	901
63	49,395−	859	919	48,476	849	911
64	50,254+	864	929	49,325	853	923
65	51,118	+0,867	−0,940	50,178−	+0,856	−0,934
66	51,985	871	951	51,034+	861	944
67	52,856	874	961	51,895−	864	955
68	53,730+	879	971	52,759	868	965
69	54,609−	882	982	53,627+	873	975
70	55,491	+0,886	−0,991	54,500−	+0,876	−0,985
71	56,377	890	1,001	55,376+	881	0,994
72	57,267	894	010	56,257	885	1,004
73	58,161−	898	019	57,142−	889	014
74	59,059−	902	028	58,031−	893	022
75	59,961−	+0,906	−1,037	58,924	+0,898	−1,031
76	60,867−	910	045	59,822	902	040
77	61,777	914	053	60,724	907	048
78	62,691+	919	060	61,631−	911	056
79	63,610+	923	068	62,542−	915	064
80	64,533+	+0,928	−1,076	63,457+	+0,921	−1,071
81	65,461−	931	083	64,378−	925	079
82	66,392+	937	089	65,303−	929	086
83	67,329−	940	097	66,232+	935	092
84	68,269+	946	102	67,167	939	099
85	69,215−	+0,949	−1,109	68,106	+0,944	−1,105
86	70,164+	955	114	69,050+	949	111
87	71,119−	959	120	69,999+	954	117
88	72,078−	963	125	70,953	959	122
89	73,041+	969	129	71,912	964	127
90	74,010−	+0,973	−1,134	72,876	+0,969	−1,132

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	$e = 0{,}14$			$e = 0{,}15$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}95041-$	$+69$	-407	$\bar{1}{,}94634-$	$+73$	-415
46	95110 −	70	403	94707	75	410
47	95180	71	398	94782 −	76	406
48	95251 +	73	393	94858	77	401
49	95324	74	389	94935 +	79	396
50	$\bar{1}{,}95398$	$+75$	-384	$\bar{1}{,}95014$	$+80$	-392
51	95473 +	77	379	95094	82	387
52	95550 −	77	374	95176 −	82	382
53	95627 +	79	369	95258	84	377
54	95706	80	364	95342	85	372
55	$\bar{1}{,}95786$	$+81$	-359	$\bar{1}{,}95427+$	$+87$	-366
56	95867	82	353	95514 −	87	362
57	95949	83	348	95601	89	356
58	96032 +	85	342	95690	90	351
59	96117 −	85	337	95780 −	91	345
60	$\bar{1}{,}96202$	$+86$	-331	$\bar{1}{,}95871$	$+92$	-340
61	96288 +	88	325	95963	93	334
62	96376 −	88	320	96056 +	95	328
63	96464 +	90	313	96151 −	95	323
64	96554 −	90	308	96246	96	316
65	$\bar{1}{,}96644$	$+91$	-302	$\bar{1}{,}96342+$	$+98$	-310
66	96735	92	295	96440 −	98	304
67	96827 +	93	289	96538	99	298
68	96920 +	94	283	96637 +	101	291
69	97014 +	95	276	96738 −	101	286
70	$\bar{1}{,}97109$	$+96$	-270	$\bar{1}{,}96839$	$+102$	-279
71	97205 −	96	264	96941	103	273
72	97301	97	257	97044	104	266
73	97398	98	250	97148 −	104	260
74	97496	99	244	97252	106	253
75	$\bar{1}{,}97595-$	$+99$	-237	$\bar{1}{,}97358-$	$+106$	-246
76	97694	100	230	97464 −	106	240
77	97794 −	100	224	97570 +	109	232
78	97894 +	101	215	97679	107	226
79	97995 +	102	209	97786	109	218
80	$\bar{1}{,}98097$	$+102$	-202	$\bar{1}{,}97895$	$+109$	-211
81	98199 +	103	195	98004 +	110	204
82	98302 +	104	188	98114 +	111	197
83	98406 −	103	181	98225	111	190
84	98509 +	105	173	98336	112	183
85	$\bar{1}{,}98614-$	$+104$	-166	$\bar{1}{,}98448-$	$+112$	-176
86	98718 +	105	158	98560 −	112	168
87	98823 +	106	151	98672	113	160
88	98929 −	105	144	98785	113	153
89	99034 +	106	136	98898	114	145
90	$\bar{1}{,}99140+$	$+107$	-128	$\bar{1}{,}99012-$	$+114$	-138

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	$e = 0{,}14$			$e = 0{,}15$		
v	M	D	D'	M	D	D'
90°	74°,010−	+0°,973	−1,134	72°,876	+0°,969	−1°,132
91	74,983	978	138	73,845	974	137
92	75,961−	982	142	74,819	979	141
93	76,943+	988	145	75,798+	985	144
94	77,931	992	148	76,783−	989	148
95	78,923+	+0,998	−1,151	77,772+	+0,995	−1,152
96	79,921	1,002	154	78,767	1,000	154
97	80,923	007	156	79,767	006	156
98	81,930+	012	157	80,773−	010	159
99	82,942+	018	159	81,783+	016	160
100	83,960−	+1,022	−1,161	82,799+	+1,022	−1,161
101	84,982	027	161	83,821	027	163
102	86,009+	033	161	84,848	032	163
103	87,042−	037	162	85,880+	038	163
104	88,079	043	161	86,918+	044	163
105	89,122−	+1,047	−1,160	87,962−	+1,048	−1,163
106	90,169+	053	159	89,010+	055	162
107	91,222	058	157	90,065−	060	161
108	92,280	063	155	91,125−	065	160
109	93,343	068	153	92,190	071	157
110	94,411+	+1,074	−1,150	93,261	+1,077	−1,155
111	95,485−	078	147	94,338−	082	152
112	96,563+	084	143	95,420	088	149
113	97,647	089	139	96,508−	093	145
114	98,736	094	135	97,601	099	141
115	99,830	+1,099	−1,130	98,700−	+1,104	−1,137
116	100,929+	105	125	99,804+	110	131
117	102,034	109	120	100,914+	116	126
118	103,143+	115	113	102,030	121	120
119	104,258	120	107	103,151	127	114
120	105,378	+1,125	−1,100	104,278	+1,132	−1,108
121	106,503	130	093	105,410	138	100
122	107,633	135	085	106,548	143	093
123	108,768	140	077	107,691+	149	085
124	109,908	145	068	108,840	154	076
125	111,053+	+1,150	−1,059	109,994+	+1,160	−1,067
126	112,203+	156	049	111,154	165	058
127	113,359−	160	040	112,319	170	048
128	114,519−	165	030	113,489+	176	038
129	115,684−	169	019	114,665+	181	027
130	116,853+	+1,175	−1,007	115,846+	+1,187	−1,016
131	118,028	179	0,995	117,033−	191	1,005
132	119,207+	185	983	118,224	197	0,993
133	120,392−	188	971	119,421	202	981
134	121,580+	194	957	120,623−	207	968
135	122,774	+1,198	−0,944	121,830−	+1,211	−0,955

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	e = 0,14			e = 0,15		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}$,99140+	+107	−128	$\bar{1}$,99012−	+114	−138
91	99247−	106	121	99126−	114	131
92	99353	107	113	99240−	114	123
93	99460−	107	106	99354	115	115
94	99567−	107	98	99469−	114	108
95	$\bar{1}$,99674−	+107	− 91	$\bar{1}$,99583+	+115	− 99
96	99781−	107	83	99698	115	92
97	99888−	107	75	99813	115	84
98	$\bar{1}$,99995	107	67	$\bar{1}$,99928	115	76
99	0,00102	107	59	0,00043	115	68
100	0,00209	+107	− 51	0,00158	+115	− 61
101	00316+	107	43	00273	115	53
102	00423+	107	35	00388−	114	45
103	00530	107	28	00502+	115	36
104	00637−	106	20	00617	114	29
105	0,00743	+106	− 12	0,00731+	+115	− 21
106	00849+	106	− 3	00846−	113	13
107	00955+	106	+ 4	00959+	114	− 5
108	01061	105	12	01073	113	+ 3
109	01166+	105	20	01186	113	11
110	0,01271+	+105	+ 28	0,01299	+112	+ 19
111	01376−	104	35	01411+	112	27
112	01480	103	43	01523+	112	35
113	01583+	104	52	01635−	111	42
114	01687−	102	59	01746−	110	50
115	0,01789	+102	+ 67	0,01856	+110	+ 58
116	01891	101	75	01966−	109	66
117	01992+	101	83	02075−	108	74
118	02093	100	90	02183	108	82
119	02193	99	98	02291−	107	89
120	0,02292	+ 98	+106	0,02398−	+106	+ 97
121	02390+	98	114	02504−	105	105
122	02488	97	121	02609−	104	113
123	02585	95	128	02713	103	120
124	02680−	96	136	02816+	103	128
125	0,02776−	+ 94	+143	0,02919	+101	+135
126	02870	93	150	03020+	101	143
127	02963	92	158	03121−	99	150
128	03055	91	165	03220	98	157
129	03146	90	172	03318	97	165
130	0,03236−	+ 89	+179	0,03415	+ 96	+172
131	03325−	87	186	03511−	94	179
132	03412	87	193	03605+	94	187
133	03499−	85	200	03699−	92	193
134	03584−	84	207	03791−	90	200
135	0,03668−	+ 82	+213	0,03881	+ 89	+207

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	$e = 0{,}14$			$e = 0{,}15$		
v	M	D	D'	M	D	D'
135°	122°,774	+1°,198	−0°,944	121°,830−	+1°,211	−0°,955
136	123,972	203	931	123,041+	217	940
137	125,175−	207	917	124,258+	222	926
138	126,382−	211	902	125,480	226	912
139	127,593	216	887	126,706+	232	896
140	128,809	+1,220	−0,871	127,938−	+1,236	−0,882
141	130,029	224	855	129,174−	240	866
142	131,253+	229	839	130,414+	246	849
143	132,482	232	822	131,660−	249	833
144	133,714+	237	805	132,909	254	815
145	134,951	+1,240	−0,788	134,163+	+1,259	−0,798
146	136,191+	245	769	135,422−	262	780
147	137,436−	248	752	136,684	267	762
148	138,684−	252	733	137,951−	270	743
149	139,936−	255	715	139,221+	275	724
150	141,191	+1,259	−0,695	140,496	+1,278	−0,705
151	142,450−	262	676	141,774+	283	684
152	143,712	265	655	143,057−	286	665
153	144,977+	269	634	144,343−	289	645
154	146,246+	272	614	145,632	293	623
155	147,518	+1,275	−0,593	146,925−	+1,296	−0,602
156	148,793	278	572	148,221−	299	581
157	150,071−	280	551	149,520	303	559
158	151,351+	284	528	150,823−	305	537
159	152,635−	285	507	152,128	308	515
160	153,920+	+1,289	−0,484	153,436	+1,311	−0,492
161	155,209	291	462	154,747	314	469
162	156,500−	292	439	156,061−	316	446
163	157,792+	296	415	157,377−	318	423
164	159,088−	297	393	158,695	321	399
165	160,385−	+1,299	−0,369	160,016−	+1,322	−0,375
166	161,684−	301	346	161,338+	325	351
167	162,985−	302	322	162,663	327	327
168	164,287	304	297	163,990−	328	303
169	165,591	305	273	165,318	330	278
170	166,896+	+1,307	−0,248	166,648−	+1,331	−0,253
171	168,203	308	224	167,979−	332	228
172	169,511	309	200	169,311	334	203
173	170,820−	310	175	170,645−	334	178
174	172,130−	310	151	171,979+	336	152
175	173,440	+1,311	−0,125	173,315	+1,336	−0,128
176	174,751+	312	100	174,651	337	102
177	176,063	312	075	175,988−	337	077
178	177,375	313	050	177,325	337	051
179	178,688−	312	026	178,662+	338	025
180	180,000	+1,312	−0,000	180,000	+1,338	−0,000

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	$e = 0{,}14$			$e = 0{,}15$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,03668 −	+ 82	+213	0,03881	+ 89	+207
136	03750 +	82	220	03970 +	88	214
137	03832 −	79	226	04058	87	220
138	03911 +	79	234	04145 −	84	226
139	03990	77	239	04229 +	84	234
140	0,04067	+ 76	+246	0,04313 −	+ 82	+239
141	04143	74	252	04395 −	80	245
142	04217	73	258	04475 −	78	252
143	04290 −	70	263	04553 +	77	258
144	04360	70	270	04630 +	75	264
145	0,04430 +	+ 68	+275	0,04705 +	+ 74	+270
146	04498 +	67	281	04779	72	275
147	04565 −	64	286	04851 −	70	280
148	04629 +	63	292	04921 −	68	286
149	04692 +	61	297	04989 −	66	291
150	0,04753 +	+ 60	+302	0,05055	+ 64	+296
151	04813	58	306	05119 +	63	301
152	04871 −	56	311	05182	60	306
153	04927 −	54	315	05242 +	59	311
154	04981	52	320	05301	57	316
155	0,05033	+ 51	+325	0,05358 −	+ 54	+320
156	05084 −	48	328	05412	53	324
157	05132	47	333	05465 −	50	328
158	05179 −	44	336	05515 +	49	333
159	05223 +	43	341	05564 −	46	336
160	0,05266	+ 41	+344	0,05610	+ 44	+340
161	05307	39	347	05654 +	42	343
162	05346	37	350	05696 +	40	347
163	05383 −	34	353	05736 +	38	350
164	05417 +	33	357	05774	35	353
165	0,05450 +	+ 31	+359	0,05809 −	+ 34	+356
166	05481	29	362	05843	31	358
167	05510 −	26	364	05874 −	29	360
168	05536 +	25	367	05903 −	26	362
169	05561 −	22	368	05929 +	25	365
170	0,05583 +	+ 21	+371	0,05954 −	+ 22	+366
171	05604 −	18	372	05976 −	19	368
172	05622 −	16	373	05995 +	18	370
173	05638	14	375	06013 −	15	371
174	05652 −	12	376	06028	13	373
175	0,05664 −	+ 9	+377	0,06041 −	+ 10	+373
176	05673 +	8	378	06051	8	375
177	05681	5	378	06059 +	6	375
178	05686 +	3	379	06065	4	376
179	05689 +	+ 1	380	06069 −	+ 1	376
180	0,05690 +	− 1	+380	0,06070 −	− 1	+376

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	$e = 0{,}16$			$e = 0{,}17$		
v	M	D	D'	M	D	D'
0°	0°,000	+0°,715	−0°,000	0°,000	+0°,699	−0°,000
1	0,715	715	016	0,699	699	015
2	1,430−	715	032	1,398+	700	031
3	2,145−	715	047	2,098−	699	047
4	2,860	715	063	2,797	700	062
5	3,575+	+0,716	−0,078	3,497−	+0,700	−0,078
6	4,291	716	094	4,197−	700	093
7	5,007	717	110	4,897	701	108
8	5,724−	717	126	5,598	701	124
9	6,441−	717	142	6,299+	702	139
10	7,158	+0,718	−0,157	7,001	+0,703	−0,155
11	7,876+	719	172	7,704−	703	171
12	8,595	719	188	8,407−	704	186
13	9,314−	721	203	9,111−	704	201
14	10,035	721	220	9,815+	706	216
15	10,756	+0,722	−0,235	10,521	+0,707	−0,232
16	11,478	723	250	11,228−	707	248
17	12,201	724	266	11,935	709	262
18	12,925	725	281	12,644−	709	278
19	13,650	726	297	13,353+	711	293
20	14,376+	+0,728	−0,312	14,064	+0,712	−0,308
21	15,104	729	328	14,776+	714	323
22	15,833−	730	343	15,490−	715	339
23	16,563−	731	358	16,205−	716	354
24	17,294	733	373	16,921−	718	369
25	18,027	+0,734	−0,388	17,639−	+0,719	−0,384
26	18,761+	736	403	18,358	721	399
27	19,497+	738	418	19,079−	722	413
28	20,235	739	434	19,801+	725	428
29	20,974+	741	448	20,526−	726	443
30	21,715+	+0,743	−0,463	21,252	+0,728	−0,458
31	22,458+	745	478	21,980	730	472
32	23,203	747	493	22,710	732	487
33	23,950	749	508	23,442	734	502
34	24,699−	750	523	24,176	736	516
35	25,449+	+0,753	−0,537	24,912+	+0,739	−0,530
36	26,202+	755	551	25,651−	740	545
37	26,957+	758	566	26,391+	743	559
38	27,715−	759	581	27,134+	746	573
39	28,474+	763	594	27,880	748	587
40	29,237−	+0,764	−0,609	28,628−	+0,750	−0,602
41	30,001	767	623	29,378	753	616
42	30,768	770	637	30,131	756	629
43	31,538−	772	651	30,887	758	644
44	32,310	775	665	31,645+	761	657
45	33,085−	+0,777	−0,679	32,406+	+0,764	−0,670

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	$e = 0{,}16$				$e = 0{,}17$			
v	$\log \frac{r}{a}$		D	D'	$\log \frac{r}{a}$		D	D'
0°	$\bar{1}$,92428	+	1	−520	$\bar{1}$,91908	+	1	−527
1	92429		3	520	91909−		3	527
2	92432−		4	520	91912−		4	527
3	92436		7	520	91916+		7	526
4	92443−		8	520	91923		9	525
5	$\bar{1}$,92451−	+	10	−519	$\bar{1}$,91932	+	10	−525
6	92461−		12	519	91942+		13	524
7	92473−		13	518	91955		14	524
8	92486+		16	517	91969+		17	523
9	92502−		17	516	91986−		18	523
10	$\bar{1}$,92519	+	19	−515	$\bar{1}$,92004−	+	20	−522
11	92538		21	514	92024		22	521
12	92559		23	513	92046		24	520
13	92582−		24	512	92070		26	518
14	92606+		27	510	92096−		27	517
15	$\bar{1}$,92633−	+	28	−510	$\bar{1}$,92123+	+	30	−515
16	92661−		29	508	92153		31	514
17	92690+		32	506	92184+		34	512
18	92722		34	504	92218−		35	511
19	92756−		35	503	92253		37	509
20	$\bar{1}$,92791−	+	37	−501	$\bar{1}$,92290	+	39	−507
21	92828−		38	499	92329		41	505
22	92866+		41	496	92370−		42	504
23	92907−		42	495	92412+		45	501
24	92949		44	492	92457		46	499
25	$\bar{1}$,92993	+	45	−490	$\bar{1}$,92503	+	48	−496
26	93038+		48	487	92551+		50	494
27	93086		49	485	92601		52	491
28	93135		51	482	92653		53	489
29	93186−		52	480	92706+		56	486
30	$\bar{1}$,93238	+	54	−476	$\bar{1}$,92762−	+	57	−484
31	93292		56	473	92819−		58	481
32	93348		57	471	92877+		61	477
33	93405+		59	467	92938		62	474
34	93464+		61	464	93000+		64	471
35	$\bar{1}$,93525	+	62	−461	$\bar{1}$,93064+	+	66	−468
36	93587+		64	457	93130		67	465
37	93651+		66	454	93197+		70	461
38	93717−		67	450	93267−		70	458
39	93784		69	447	93337+		73	454
40	$\bar{1}$,93853−	+	70	−443	$\bar{1}$,93410	+	74	−450
41	93923−		71	439	93484		76	446
42	93994+		74	434	93560−		77	443
43	94068−		75	431	93637		79	438
44	94143−		76	427	93716		81	434
45	$\bar{1}$,94219	+	78	−422	$\bar{1}$,93797−	+	82	−431

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	$e = 0{,}16$			$e = 0{,}17$		
v	M	D	D'	M	D	D'
45°	33°,085 −	+0°,777	−0°,679	32°,406 +	+0°,764	−0°,670
46	33,862 +	781	692	33,170 +	767	684
47	34,643	783	706	33,937 +	770	697
48	35,426	786	719	34,707 +	773	711
49	36,212 +	790	732	35,480 +	777	724
50	37,002 −	+0,792	−0,745	36,257 −	+0,779	−0,738
51	37,794	796	758	37,036	782	751
52	38,590 −	798	772	37,818 +	786	763
53	39,388 +	802	784	38,604 +	790	776
54	40,190 +	805	796	39,394 −	792	789
55	40,995 +	+0,809	−0,809	40,186 +	+0,797	−0,801
56	41,804	812	821	40,983 −	799	814
57	42,616 +	816	834	41,782 +	804	826
58	43,432	819	846	42,586	807	839
59	44,251	823	858	43,393	811	850
60	45,074 −	+0,826	−0,870	44,204	+0,815	−0,862
61	45,900 +	830	881	45,019	819	874
62	46,730 +	835	892	45,838 −	822	886
63	47,565 −	837	905	46,660 +	827	897
64	48,402 +	842	915	47,487	831	908
65	49,244 +	+0,846	−0,926	48,318	+0,835	−0,919
66	50,090 +	850	937	49,153	839	930
67	50,940	854	948	49,992 +	844	941
68	51,794 +	858	958	50,836	848	951
69	52,652 +	863	968	51,684	853	962
70	53,515	+0,867	−0,978	52,537 −	+0,856	−0,973
71	54,382 −	871	989	53,393 +	862	982
72	55,253	875	0,998	54,255	866	0,992
73	56,128 +	881	1,007	55,121	871	1,001
74	57,009 −	884	017	55,992	876	011
75	57,893	+0,889	−1,025	56,868 −	+0,880	−1,020
76	58,782 +	894	034	57,748	885	029
77	59,676	899	043	58,633 +	891	037
78	60,575 −	903	051	59,524 −	895	047
79	61,478	908	059	60,419 −	900	055
80	62,386	+0,913	−1,067	61,319	+0,906	−1,062
81	63,299	918	074	62,225 −	910	071
82	64,217	923	082	63,135	916	078
83	65,140	928	089	64,051	921	085
84	66,068	933	096	64,972 +	927	092
85	67,001	+0,938	−1,102	65,899	+0,932	−1,099
86	67,939	943	108	66,831 −	937	105
87	68,882 +	949	114	67,768	943	111
88	69,831	954	120	68,711	949	117
89	70,785 −	959	125	69,660 −	954	123
90	71,744	+0,964	−1,130	70,614 −	+0,959	−1,129

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	$e = 0{,}16$			$e = 0{,}17$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}94219$	+ 78	−422	$\bar{1}{,}93797-$	+ 82	−431
46	94297−	79	418	93879−	83	426
47	94376	81	414	93962+	86	421
48	94457−	82	409	94048−	86	417
49	94539	83	405	94134+	88	412
50	$\bar{1}{,}94622+$	+ 85	−400	$\bar{1}{,}94222-$	+ 90	−407
51	94707	87	395	94312+	91	403
52	94794−	87	391	94403+	93	398
53	94881	89	385	94496	94	393
54	94970+	91	380	94590	96	388
55	$\bar{1}{,}95061-$	+ 91	−375	$\bar{1}{,}94686-$	+ 97	−383
56	95152	93	369	94783−	98	379
57	95245	94	364	94881−	99	373
58	95339+	96	359	94980+	101	367
59	95435−	96	354	95081+	102	362
60	$\bar{1}{,}95531+$	+ 98	−348	$\bar{1}{,}95183+$	+104	−356
61	95629+	99	342	95287	105	351
62	95728+	100	336	95392−	106	346
63	95828+	102	330	95498−	107	340
64	95930−	102	325	95605	108	334
65	$\bar{1}{,}96032$	+104	−319	$\bar{1}{,}95713+$	+110	−328
66	96136−	104	313	95823−	110	322
67	96240	106	307	95933+	112	315
68	96346−	106	301	96045+	113	309
69	96452+	108	294	96158	114	303
70	$\bar{1}{,}96560$	+108	−288	$\bar{1}{,}96272$	+115	−297
71	96668+	110	281	96387	116	291
72	96778	110	275	96503	117	284
73	96888+	111	268	96620−	118	278
74	96999+	113	261	96738−	118	271
75	$\bar{1}{,}97112-$	+112	−256	$\bar{1}{,}96856+$	+120	−264
76	97224+	114	248	96976	121	258
77	97338	115	241	97097	121	251
78	97453−	115	235	97218	122	244
79	97568−	116	228	97340	123	237
80	$\bar{1}{,}97684-$	+116	−221	$\bar{1}{,}97463$	+124	−230
81	97800	117	213	97587−	124	223
82	97917+	118	206	97711	125	216
83	98035	118	199	97836	125	209
84	98153+	119	192	97961+	127	201
85	$\bar{1}{,}98272+$	+120	−184	$\bar{1}{,}98088-$	+126	−194
86	98392−	120	178	98214+	128	186
87	98512−	120	170	98342−	128	180
88	98632	121	162	98470−	128	172
89	98753−	121	155	98598−	128	165
90	$\bar{1}{,}98874-$	+121	−148	$\bar{1}{,}98726+$	+129	−156

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	$e = 0{,}16$			$e = 0{,}17$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
90	71,744	+0,964	−1,130	70,614−	+0,959	−1,129
91	72,708+	970	135	71,573+	966	133
92	73,678+	976	139	72,539	971	138
93	74,654−	981	144	73,510+	977	142
94	75,635−	985	148	74,487+	984	146
95	76,620	+0,993	−1,149	75,471−	+0,988	−1,151
96	77,613+	0,998	154	76,459+	0,995	153
97	78,611	1,003	157	77,454+	1,001	156
98	79,614+	009	159	78,455+	007	159
99	80,623+	015	161	79,462	013	162
100	81,638	+1,020	−1,163	80,475	+1,019	−1,164
101	82,658+	027	164	81,494+	026	165
102	83,685−	032	165	82,520−	031	168
103	84,717	038	166	83,551	038	168
104	85,755−	044	166	84,589−	044	169
105	86,799−	+1,049	−1,166	85,633−	+1,050	−1,169
106	87,848+	056	165	86,683	056	168
107	88,904	061	165	87,739+	063	167
108	89,965	068	163	88,802+	070	166
109	91,033	073	161	89,872−	075	166
110	92,106+	+1,080	−1,159	90,947	+1,082	−1,163
111	93,186−	085	157	92,029	088	161
112	94,271	092	154	93,117+	095	158
113	95,363−	097	151	94,212	101	155
114	96,460	103	147	95,313+	108	152
115	97,563+	+1,110	−1,142	96,421	+1,114	−1,148
116	98,673−	115	138	97,535	121	144
117	99,788+	122	132	98,656−	127	140
118	100,910−	127	127	99,783−	133	134
119	102,037	133	121	100,916	140	128
120	103,170+	+1,140	−1,114	102,056−	+1,146	−1,123
121	104,310	145	108	103,202	153	116
122	105,455	151	100	104,355−	159	109
123	106,606+	158	092	105,514−	165	101
124	107,764−	163	085	106,679	172	093
125	108,927−	+1,169	−1,076	107,851−	+1,178	−1,085
126	110,096−	175	067	109,029	184	076
127	111,271−	180	058	110,213+	191	066
128	112,451+	187	047	111,404	197	057
129	113,638−	192	037	112,601−	203	047
130	114,830	+1,198	−1,026	113,804	+1,209	−1,036
131	116,028−	203	015	115,013	215	024
132	117,231	209	1,003	116,228+	222	012
133	118,440+	215	0,990	117,450	227	1,001
134	119,655	220	978	118,677+	234	0,988
135	120,875	+1,226	−0,964	119,911−	+1,239	−0,975

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	$e = 0{,}16$			$e = 0{,}17$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}98874-$	+121	−148	$\bar{1}{,}98726+$	+129	−156
91	98995	122	140	98855+	130	149
92	99117	122	132	98985	130	142
93	99239	122	124	99115−	129	134
94	99361	123	117	99244+	131	126
95	$\bar{1}{,}99484-$	+122	−109	$\bar{1}{,}99375-$	+130	−119
96	99606+	123	101	99505	131	110
97	99729	123	93	99636−	130	103
98	99852−	123	86	99766+	131	95
99	$\bar{1}{,}99975-$	122	78	$\bar{1}{,}99897$	131	87
100	0,00097+	+123	− 69	0,00028−	+131	− 79
101	00220+	123	61	00159−	130	72
102	00343	123	54	00289+	131	63
103	00466−	122	46	00420	130	55
104	00588	122	38	00550+	131	47
105	0,00710+	+123	− 29	0,00681−	+130	− 39
106	00833−	121	22	00811−	129	31
107	00954+	122	14	00940+	130	22
108	01076	121	− 6	01070	129	15
109	01197	121	+ 2	01199	129	− 7
110	0,01318	+120	+ 10	0,01328	+128	+ 1
111	01438	120	18	01456+	128	10
112	01558	119	26	01584	127	17
113	01677+	119	34	01711+	127	26
114	01796	118	42	01838+	126	34
115	0,01914+	+118	+ 50	0,01964+	+126	+ 42
116	02032	117	58	02090	125	49
117	02149	116	66	02215−	124	57
118	02265	115	74	02339−	123	65
119	02380+	115	82	02462	122	73
120	0,02495	+114	+ 89	0,02584+	+122	+ 81
121	02609−	113	97	02706	120	89
122	02722−	111	104	02826+	120	97
123	02833+	111	113	02946	119	105
124	02944+	110	121	03065−	117	112
125	0,03054+	+109	+128	0,03182	+116	+120
126	03163	108	135	03298+	116	128
127	03271	106	143	03414−	114	135
128	03377+	106	151	03528−	112	143
129	03483	104	157	03640+	112	151
130	0,03587	+103	+165	0,03752	+110	+158
131	03690	102	172	03862	109	165
132	03792−	100	179	03971	107	172
133	03892−	99	186	04078+	106	180
134	03991−	97	193	04184	104	187
135	0,04088	+ 96	+200	0,04288+	+103	+194

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	$e = 0{,}16$			$e = 0{,}17$		
v	M	D	D'	M	D	D'
135°	120°,875	+1°,226	−0°,964	119°,911−	+1°,239	−0°,975
136	122,101−	231	951	121,150	245	961
137	123,332−	236	937	122,395	251	947
138	124,568	242	922	123,646	256	933
139	125,810−	246	908	124,902+	263	917
140	127,056+	+1,252	−0,891	126,165−	+1,267	−0,903
141	128,308+	257	876	127,432+	274	886
142	129,565+	262	859	128,706−	278	871
143	130,827	267	843	129,984+	284	853
144	132,094	271	826	131,268	289	836
145	133,365+	+1,277	−0,808	132,557	+1,294	−0,818
146	134,642−	280	791	133,851+	300	800
147	135,922+	286	771	135,151−	304	783
148	137,208−	289	753	136,455−	309	764
149	138,497+	294	733	137,764−	313	744
150	139,791+	+1,299	−0,714	139,077+	+1,318	−0,724
151	141,090−	302	695	140,395+	323	704
152	142,392	306	674	141,718	327	684
153	143,698+	311	653	143,045	331	663
154	145,009−	314	633	144,376+	336	641
155	146,323−	+1,317	−0,611	145,712−	+1,339	−0,621
156	147,640	321	589	147,051	343	598
157	148,961	325	567	148,394	347	576
158	150,286−	327	545	149,741−	350	554
159	151,613+	331	522	151,091	354	530
160	152,944+	+1,334	−0,499	152,445−	+1,357	−0,507
161	154,278	337	476	153,802	360	484
162	155,615	339	453	155,162	363	460
163	156,954+	342	429	156,525	366	436
164	158,296+	345	405	157,891	369	412
165	159,641−	+1,346	−0,381	159,260−	+1,371	−0,387
166	160,987+	349	356	160,631	373	362
167	162,336+	351	332	162,004+	376	337
168	163,687+	353	307	163,380	378	312
169	165,040	355	282	164,758	380	287
170	166,395−	+1,356	−0,257	166,138−	+1,381	−0,262
171	167,751−	357	232	167,519	383	236
172	169,108	359	206	168,902−	384	210
173	170,467	360	181	170,286	386	184
174	171,827−	360	155	171,672−	386	158
175	173,187+	+1,362	−0,129	173,058	+1,387	−0,132
176	174,549	362	104	174,445+	388	105
177	175,911+	363	078	175,833+	389	079
178	177,274	363	052	177,222	389	053
179	178,637	363	026	178,611	389	026
180	180,000	+1,363	−0,000	180,000	+1,389	−0,000

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	$e = 0{,}16$			$e = 0{,}17$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,04088	+ 96	+200	0,04288+	+103	+194
136	04184	94	207	04391	101	201
137	04278+	93	214	04492+	100	208
138	04371+	92	221	04592	98	214
139	04463−	89	227	04690−	96	221
140	0,04552+	+ 88	+234	0,04786	+ 94	+227
141	04640+	87	240	04880	93	234
142	04727−	84	246	04973−	90	240
143	04811	83	252	05063+	89	247
144	04894	81	258	05152	87	253
145	0,04975	+ 79	+264	0,05239	+ 85	+258
146	05054	77	270	05324	83	264
147	05131+	76	276	05407−	81	270
148	05207−	73	281	05488−	78	275
149	05280	71	286	05566+	77	281
150	0,05351+	+ 69	+292	0,05643	+.74	+286
151	05420−	68	297	05717+	73	292
152	05488	65	302	05790−	70	296
153	05553+	64	307	05860−	68	301
154	05617−	61	311	05928−	65	306
155	0,05678−	+ 58	+315	0,05993	+ 63	+311
156	05736+	57	320	06056+	61	316
157	05793	55	324	06117	59	320
158	05848−	52	328	06176−	56	324
159	05900	50	332	06232−	53	328
160	0,05950−	+ 47	+335	0,06285+	+ 52	+332
161	05997+	46	340	06337−	48	335
162	06043−	43	342	06385+	47	339
163	06086	41	346	06432−	43	342
164	06127−	38	348	06475+	42	345
165	0,06165	+ 36	+352	0,06517−	+ 38	+348
166	06201−	33	354	06555	36	351
167	06234+	31	357	06591+	34	354
168	06265+	29	360	06625−	30	355
169	06294	26	361	06655+	29	358
170	0,06320+	+ 24	+364	0,06684−	+ 25	+360
171	06344	21	365	06709+	23	362
172	06365+	19	367	06732	20	364
173	06384	17	368	06752+	18	365
174	06401−	13	369	06770	15	366
175	0,06414+	+ 12	+371	0,06785−	+ 12	+367
176	06426−	8	371	06797	9	368
177	06434+	7	372	06806+	7	369
178	06441−	4	372	06813	4	369
179	06445−	+ 1	372	06817+	+ 2	370
180	0,06446	− 1	+373	0,06819−	− 2	+369

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	$e = 0{,}18$			$e = 0{,}19$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+0,684	−0,000	0,000	+0,668	−0,000
1	0,684−	683	016	0,668+	669	015
2	1,367+	684	030	1,337−	668	031
3	2,051	684	046	2,005	669	045
4	2,735	684	061	2,674−	669	061
5	3,419	+0,685	−0,076	3,343−	+0,669	−0,076
6	4,104−	685	092	4,012	670	090
7	4,789−	685	107	4,682−	670	106
8	5,474	686	122	5,352−	670	121
9	6,160−	686	138	6,022+	672	135
10	6,846+	+0,687	−0,152	6,694−	+0,671	−0,151
11	7,533+	688	168	7,365+	673	165
12	8,221	689	183	8,038	673	181
13	8,910−	689	199	8,711+	675	195
14	9,599	690	213	9,386−	675	211
15	10,289+	+0,691	−0,228	10,061−	+0,676	−0,226
16	10,980+	693	243	10,737	677	240
17	11,673−	693	259	11,414	678	255
18	12,366	694	274	12,092+	680	270
19	13,060+	696	288	12,772−	680	285
20	13,756	+0,697	−0,304	13,452+	+0,682	−0,299
21	14,453	698	319	14,134+	684	314
22	15,151+	700	335	14,818−	685	330
23	15,851	701	348	15,503−	686	344
24	16,552+	703	363	16,189	688	359
25	17,255	+0,704	−0,378	16,877	+0,689	−0,374
26	17,959+	707	393	17,566+	692	388
27	18,666−	707	408	18,258−	693	403
28	19,373+	710	422	18,951−	695	417
29	20,083	711	437	19,646−	696	432
30	20,794+	+0,714	−0,452	20,342+	+0,699	−0,446
31	21,508−	715	467	21,041+	701	460
32	22,223	717	481	21,742	703	475
33	22,940+	720	495	22,445	705	489
34	23,660	722	510	23,150+	708	503
35	24,382−	+0,724	−0,524	23,858−	+0,710	−0,518
36	25,106	726	538	24,568−	712	532
37	25,832	729	552	25,280−	714	546
38	26,561	732	567	25,994+	718	559
39	27,293+	733	581	26,712−	719	574
40	28,026	+0,736	−0,595	27,431+	+0,723	−0,587
41	28,762+	740	608	28,154	725	602
42	29,502−	741	623	28,879	728	615
43	30,243+	745	636	29,607	731	629
44	30,988	748	650	30,338	734	642
45	31,736−	+0,750	−0,664	31,072	+0,737	−0,656

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	$e = 0{,}18$				$e = 0{,}19$			
v	$\log \frac{r}{a}$		D	D'	$\log \frac{r}{a}$		D	D'
0°	$\bar{1}{,}91381+$	+	1	−532	$\bar{1}{,}90849-$	+	1	−540
1	91382+		3	532	90850−		3	540
2	91385+		5	532	90853−		5	540
3	91390+		8	532	90858		7	539
4	91398−		9	533	90865+		10	538
5	$\bar{1}{,}91407-$	+	11	−532	$\bar{1}{,}90875$	+	12	−538
6	91418−		13	531	90887−		13	538
7	91431		15	531	90900+		16	537
8	91446		17	530	90916		18	536
9	91463		19	529	90934		20	536
10	$\bar{1}{,}91482$	+	21	−528	$\bar{1}{,}90954$	+	22	−535
11	91503+		23	527	90976		24	534
12	91526+		26	526	91000+		27	533
13	91552−		27	525	91027−		28	532
14	91579−		29	524	91055		30	530
15	$\bar{1}{,}91608-$	+	31	−523	$\bar{1}{,}91085+$	+	33	−529
16	91639−		33	521	91118		35	528
17	91672		35	519	91153−		36	527
18	91707		37	518	91189+		39	524
19	91744		39	516	91228		41	523
20	$\bar{1}{,}91783-$	+	41	−514	$\bar{1}{,}91269-$	+	43	−521
21	91824−		42	512	91312−		44	520
22	91866+		45	510	91356+		47	517
23	91911+		47	508	91403+		49	515
24	91958		49	506	91452		51	513
25	$\bar{1}{,}92007-$	+	50	−504	$\bar{1}{,}91503$	+	53	−510
26	92057		53	501	91556		55	508
27	92110−		54	499	91611		57	506
28	92164		56	496	91668		59	503
29	92220		58	493	91727−		61	501
30	$\bar{1}{,}92278$	+	60	−490	$\bar{1}{,}91788-$	+	62	−498
31	92338		62	488	91850+		65	495
32	92400		64	485	91915		67	492
33	92464−		65	482	91982		68	489
34	92529		67	479	92050+		71	486
35	$\bar{1}{,}92596+$	+	69	−475	$\bar{1}{,}92121$	+	72	−483
36	92665+		71	472	92193+		75	479
37	92736+		73	468	92268−		76	476
38	92809		74	465	92344		78	473
39	92883+		77	461	92422		80	469
40	$\bar{1}{,}92960-$	+	78	−458	$\bar{1}{,}92502$	+	82	−466
41	93038−		79	454	92584−		83	462
42	93117+		82	450	92667		85	458
43	93199−		83	447	92752+		88	454
44	93282−		84	442	92840−		88	450
45	$\bar{1}{,}93366+$	+	87	−438	$\bar{1}{,}92928+$	+	91	−445

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	e = 0,18			e = 0,19		
v	M	D	D'	M	D	D'
45°	31°,736 −	+0°,750	−0°,664	31°,072	+0°,737	−0°,656
46	32,486	754	677	31,809	740	669
47	33,240 −	756	691	32,549	743	683
48	33,996	760	704	33,292 +	747	696
49	34,756	763	717	34,039	750	709
50	35,519	+0,766	−0,730	34,789	+0,753	−0,723
51	36,285	770	743	35,542	757	735
52	37,055	773	756	36,299	760	748
53	37,828	777	769	37,059	764	761
54	38,605 −	780	782	37,823	768	774
55	39,385 −	+0,784	−0,794	38,591 −	+0,771	−0,787
56	40,169 −	787	807	39,362	775	799
57	40,956	791	819	40,137 +	779	811
58	41,747 +	796	831	40,916 +	784	823
59	42,543 −	799	843	41,700 −	787	836
60	43,342 −	+0,803	−0,855	42,487 −	+0,791	−0,848
61	44,145	807	867	43,278	796	859
62	44,952	811	878	44,074 −	800	871
63	45,763 +	816	889	44,874 −	804	883
64	46,579	820	901	45,678 −	808	894
65	47,399 −	+0,824	−0,913	46,486 +	+0,814	−0,905
66	48,223	828	923	47,300 −	817	917
67	49,051 +	834	934	48,117 +	823	927
68	49,885 −	837	945	48,940 −	827	938
69	50,722	842	955	49,767	832	949
70	51,564 +	+0,847	−0,965	50,599	+0,837	−0,959
71	52,411 +	852	975	51,436 −	841	970
72	53,263	857	986	52,277 +	847	979
73	54,120 −	861	0,996	53,124 +	852	989
74	54,981	867	1,005	53,976	857	0,999
75	55,848 −	+0,871	−1,015	54,833 +	+0,863	−1,008
76	56,719	877	023	55,696 −	867	018
77	57,596 −	881	033	56,563 +	873	027
78	58,477 +	887	041	57,436 +	879	036
79	59,364 +	893	049	58,315	884	045
80	60,257 −	+0,897	−1,058	59,199	+0,890	−1,053
81	61,154 +	903	065	60,089 −	895	062
82	62,057 +	909	073	60,984	901	069
83	62,966	914	081	61,885	907	077
84	63,880 +	920	088	62,792	913	085
85	64,800	+0,926	−1,095	63,705 −	+0,918	−1,092
86	65,726 −	931	103	64,623 +	925	098
87	66,657 −	937	109	65,548 +	931	105
88	67,594 −	943	115	66,479	937	112
89	68,537 −	948	121	67,416	943	118
90	69,485 +	+0,955	−1,126	68,359 +	+0,950	−1,124

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	$e = 0{,}18$			$e = 0{,}19$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}93366+$	+ 87	−438	$\bar{1}{,}92928+$	+ 91	−445
46	93453	88	434	93019	93	442
47	93541	90	429	93112−	94	438
48	93631−	91	425	93206−	95	434
49	93722	93	421	93301+	98	428
50	$\bar{1}{,}93815-$	+ 94	−416	$\bar{1}{,}93399$	+ 99	−424
51	93909+	96	411	93498	101	419
52	94005+	98	406	93599	102	415
53	94103	99	402	93701+	104	410
54	94202	101	397	93805+	106	405
55	$\bar{1}{,}94303+$	+101	−392	$\bar{1}{,}93911$	+107	−400
56	94404+	104	386	94018	109	395
57	94508	105	381	94127−	110	390
58	94613	106	376	94237	112	385
59	94719+	108	370	94349−	113	380
60	$\bar{1}{,}94827$	+109	−365	$\bar{1}{,}94462$	+114	−374
61	94936	110	360	94576+	116	368
62	95046+	112	354	94692+	118	362
63	95158	113	348	94810	119	357
64	95271	114	342	94929−	120	352
65	$\bar{1}{,}95385+$	+116	−336	$\bar{1}{,}95049$	+121	−346
66	95501	117	331	95170+	123	339
67	95618−	118	325	95293	124	334
68	95736−	119	319	95417	125	328
69	95855−	120	313	95542+	127	321
70	$\bar{1}{,}95975$	+121	−306	$\bar{1}{,}95669$	+128	−315
71	96096+	123	299	95797−	128	309
72	96219−	123	294	95925+	130	302
73	96342	125	287	96055+	131	296
74	96467−	125	281	96186+	132	289
75	$\bar{1}{,}96592$	+126	−274	$\bar{1}{,}96318+$	+133	−283
76	96718+	128	267	96451+	135	276
77	96846−	128	260	96586−	135	270
78	96974	129	253	96721−	136	263
79	97103	130	246	96857−	136	256
80	$\bar{1}{,}97233$	+131	−240	$\bar{1}{,}96993+$	+138	−249
81	97364−	131	233	97131	139	242
82	97495	132	225	97270−	139	235
83	97627+	133	218	97409	140	228
84	97760	134	211	97549	141	220
85	$\bar{1}{,}97894-$	+134	−204	$\bar{1}{,}97690$	+141	−213
86	98028−	134	197	97831+	142	206
87	98162+	136	189	97973+	143	198
88	98298−	135	182	98116	143	191
89	98433+	137	174	98259+	144	183
90	$\bar{1}{,}98570-$	+136	−167	$\bar{1}{,}98403+$	+144	−176

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	$e = 0,18$			$e = 0,19$		
v	M	D	D'	M	D	D'
90°	69°,485+	+0°,955	−1°,126	68°,359+	+0°,950	−1°,124
91	70,440+	961	131	69,309	956	130
92	71,401	967	136	70,265−	962	135
93	72,368	973	141	71,227	969	140
94	73,341	979	145	72,196−	975	145
95	74,320+	+0,986	−1,149	73,171−	+0,982	−1,149
96	75,306	992	153	74,153−	988	153
97	76,298−	0,998	157	75,141	0,995	157
98	77,296−	1,004	160	76,136	1,002	160
99	78,300+	011	162	77,138	008	163
100	79,311+	+1,018	−1,165	78,146+	+1,016	−1,165
101	80,329−	023	167	79,162	022	168
102	81,352−	031	168	80,184+	029	170
103	82,383+	037	170	81,213+	037	171
104	83,420+	044	170	82,250−	043	173
105	84,464	+1,051	−1,171	83,293	+1,050	−1,174
106	85,515−	057	172	84,343+	058	174
107	86,572−	064	171	85,401−	064	175
108	87,636−	070	171	86,465	072	174
109	88,706	078	169	87,537−	079	173
110	89,784−	+1,084	−1,168	88,616−	+1,086	−1,172
111	90,868−	091	166	89,702−	093	171
112	91,959−	098	164	90,795	101	168
113	93,057−	104	161	91,896−	107	166
114	94,161+	112	158	93,003+	116	163
115	95,273−	+1,118	−1,154	94,119−	+1,122	−1,160
116	96,391	125	150	95,241	130	156
117	97,516+	133	145	96,371	137	152
118	98,649−	139	141	97,508	144	147
119	99,788−	145	136	98,652+	152	142
120	100,933−	+1,153	−1,129	99,804	+1,159	−1,137
121	102,086+	160	123	100,963+	167	130
122	103,246	167	116	102,130−	173	124
123	104,413−	173	110	103,303+	182	117
124	105,586	180	101	104,485−	188	110
125	106,766	+1,187	−1,093	105,673	+1,196	−1,102
126	107,953	194	084	106,869−	202	094
127	109,147	200	076	108,071+	210	084
128	110,347+	207	066	109,281+	218	075
129	111,554+	214	055	110,499−	224	066
130	112,768+	+1,221	−1,045	111,723	+1,232	−1,055
131	113,989−	227	034	112,955−	238	044
132	115,216	233	023	114,193+	246	032
133	116,449+	240	1,010	115,439	252	021
134	117,689+	247	0,998	116,691+	260	1,008
135	118,936	+1,253	−0,985	117,951	+1,266	−0,996

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	$e = 0{,}18$			$e = 0{,}19$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}98570-$	+136	−167	$\bar{1}{,}98403+$	+144	−176
91	98706+	137	159	98547+	145	168
92	98843+	138	151	98692	145	161
93	98981−	137	144	98837+	146	153
94	99118+	138	135	98983−	145	146
95	$\bar{1}{,}99256+$	+139	−128	$\bar{1}{,}99128+$	+146	−137
96	99395−	138	121	99274+	147	129
97	99533	138	112	99421−	146	122
98	99671+	139	104	99567	147	114
99	99810	139	96	99714−	146	106
100	$\bar{1}{,}99949-$	+138	− 89	$\bar{1}{,}99860+$	+147	− 98
101	0,00087+	139	80	0,00007	147	90
102	00226	139	72	00154−	146	82
103	00365−	138	65	00300+	147	74
104	00503	139	56	00447−	146	66
105	0,00642−	+138	− 49	0,00593	+146	− 58
106	00780−	138	41	00739+	146	49
107	00918−	137	33	00885+	146	41
108	01055	137	24	01031	145	33
109	01192+	137	16	01176+	145	25
110	0,01329	+137	− 8	0,01321+	+145	− 17
111	01466−	135	0	01466−	144	9
112	01601+	136	+ 9	01610	143	− 1
113	01737	135	16	01753+	143	+ 8
114	01872−	134	24	01896+	142	16
115	0,02006−	+133	+ 32	0,02038+	+142	+ 24
116	02139+	133	41	02180	141	32
117	02272	132	49	02321	140	40
118	02404	131	57	02461	139	48
119	02535	130	65	02600	138	57
120	0,02665+	+130	+ 73	0,02738+	+138	+ 65
121	02795	128	81	02876−	136	72
122	02923+	128	89	03012	135	81
123	03051−	126	96	03147+	134	89
124	03177	125	104	03281+	133	97
125	0,03302	+124	+112	0,03414+	+132	+105
126	03426+	123	120	03546+	131	112
127	03549	122	128	03677−	129	120
128	03671−	120	135	03806	128	128
129	03791	119	143	03934−	126	135
130	0,03910−	+117	+150	0,04060	+125	+143
131	04027+	116	158	04185	123	151
132	04143+	115	165	04308+	122	159
133	04258−	113	172	04430+	120	166
134	04371−	111	179	04550+	119	173
135	0,04482	+110	+187	0,04669	+117	+180

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	$e = 0{,}18$			$e = 0{,}19$		
v	M	D	D'	M	D	D'
135°	118°,936	+1°,253	−0°,985	117°,951	+1°,266	−0°,996
136	120,189−	259	972	119,217	273	982
137	121,448	265	958	120,490	280	968
138	122,713+	272	943	121,770	286	954
139	123,985−	277	929	123,056+	293	939
140	125,262+	+1,284	−0,913	124,349+	+1,300	−0,924
141	126,546	289	897	125,649−	306	908
142	127,835+	296	880	126,955−	312	892
143	129,131−	301	864	128,267−	318	875
144	130,432	307	847	129,585	324	858
145	131,739−	+1,312	−0,830	130,909+	+1,331	−0,840
146	133,051	317	811	132,240−	336	822
147	134,368+	323	792	133,576	342	804
148	135,691+	329	773	134,918−	347	785
149	137,020−	333	755	136,265+	353	764
150	138,353	+1,338	−0,735	137,618+	+1,359	−0,744
151	139,691	343	714	138,977	364	724
152	141,034+	348	693	140,341−	369	704
153	142,382	353	672	141,710−	373	683
154	143,735−	356	652	143,083+	379	661
155	145,091+	+1,362	−0,629	144,462	+1,383	−0,639
156	146,453−	365	608	145,845+	388	616
157	147,818	369	585	147,233	392	594
158	149,187+	374	562	148,625+	397	570
159	150,561−	377	539	150,022	400	548
160	151,938−	+1,380	−0,516	151,422+	+1,405	−0,523
161	153,318	384	491	152,827−	408	500
162	154,702	387	467	154,235−	411	475
163	156,089	390	443	155,646	415	450
164	157,479+	394	418	157,061	418	425
165	158,873−	+1,396	−0,394	158,479	+1,421	−0,400
166	160,269−	398	369	159,900	423	374
167	161,667	401	344	161,323	427	348
168	163,068	403	318	162,750+	429	322
169	164,471	405	292	164,179+	431	296
170	165,876+	+1,407	−0,266	165,610+	+1,434	−0,270
171	167,283+	409	239	167,044−	435	244
172	168,692	410	213	168,479−	436	218
173	170,102	412	187	169,915	438	190
174	171,514−	412	161	171,353	439	163
175	172,926+	+1,414	−0,134	172,792+	+1,441	−0,136
176	174,340	414	107	174,233−	441	109
177	175,754+	415	080	175,674	442	082
178	177,169+	416	053	177,116−	442	055
179	178,585−	415	027	178,558−	442	028
180	180,000	+1,415	−0,000	180,000	+1,442	−0,000

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	$e = 0{,}18$			$e = 0{,}19$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,04482	+110	+187	0,04669	+117	+180
136	04592 −	108	194	04786 −	115	187
137	04700	106	201	04901 −	113	194
138	04806	105	208	05014	111	201
139	04911 −	102	214	05125	109	208
140	0,05013 +	+101	+221	0,05234 +	+108	+215
141	05114	99	228	05342	105	222
142	05213	97	234	05447	103	228
143	05310 −	95	240	05550 +	101	235
144	05405 −	92	246	05651 +	99	242
145	0,05497 +	+ 91	+253	0,05750 +	+ 97	+248
146	05588 +	89	259	05847	95	253
147	05677	86	265	05942 −	92	259
148	05763 +	84	271	06034 −	89	265
149	05847 +	82	276	06123 +	88	271
150	0,05929 +	+ 80	+282	0,06211	+ 85	+276
151	06009	77	287	06296	82	282
152	06086 +	75	292	06378 +	80	287
153	06161 +	73	297	06458 +	78	293
154	06234	70	302	06536 −	75	297
155	0,06304	+ 68	+307	0,06611 −	+ 72	+302
156	06372 −	65	311	06683 −	69	306
157	06437	63	315	06752 +	67	311
158	06500 −	60	319	06819	64	316
159	06560 −	57	323	06883 +	62	320
160	0,06617	+ 55	+328	0,06945 −	+ 58	+323
161	06672	52	331	07003 +	56	328
162	06724	50	335	07059	53	331
163	06774 −	46	338	07112	50	334
164	06820 +	45	342	07162	47	338
165	0,06865 −	+ 41	+344	0,07209	+ 44	+341
166	06906	39	347	07253	41	344
167	06945 −	35	349	07294 +	39	347
168	06980 −	33	353	07333 −	35	349
169	07013 +	31	355	07368	32	351
170	0,07044 −	+ 27	+356	0,07400 +	+ 29	+354
171	07071	25	358	07429 +	27	356
172	07096 −	21	360	07456 −	23	357
173	07117	19	362	07479	20	358
174	07136	16	363	07499	18	360
175	0,07152	+ 13	+365	0,07517	+ 13	+360
176	07165	10	365	07530	11	362
177	07175	7	366	07541 −	8	362
178	07182 +	5	367	07549 −	4	363
179	07187 −	+ 1	366	07553	+ 1	363
180	0,07188 +	− 1	+366	0,07554 −	− 1	+364

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	$e = 0{,}20$			$e = 0{,}21$		
v	M	D	D'	M	D	D'
0°	0°,000	+0°,653	−0°,000	0°,000	+0°,638	−0°,000
1	0,653+	653	015	0,638+	639	014
2	1,306+	654	029	1,277−	638	030
3	1,960	653	045	1,915+	639	044
4	2,613+	654	059	2,554	639	059
5	3,267+	+0,655	−0,074	3,193	+0,639	−0,073
6	3,922−	654	090	3,832+	640	087
7	4,576	655	104	4,472+	640	102
8	5,231+	656	119	5,112+	641	117
9	5,887	656	134	5,753+	642	132
10	6,543	+0,657	−0,148	6,395−	+0,642	−0,147
11	7,200	657	163	7,037−	642	161
12	7,857+	659	178	7,679+	644	175
13	8,516	659	193	8,323	645	190
14	9,175	660	207	8,968−	645	205
15	9,835+	+0,662	−0,222	9,613	+0,647	−0,219
16	10,497−	662	237	10,260−	647	234
17	11,159−	663	252	10,907	649	248
18	11,822	665	266	11,556	650	263
19	12,487−	666	281	12,206−	651	277
20	13,153−	+0,667	−0,296	12,857	+0,653	−0,292
21	13,820	668	310	13,510−	654	307
22	14,488+	671	324	14,164−	655	321
23	15,159−	671	340	14,819	657	335
24	15,830+	673	354	15,476+	659	349
25	16,503+	+0,675	−0,368	16,135	+0,661	−0,364
26	17,178+	677	382	16,796−	662	378
27	17,855	679	397	17,458−	664	392
28	18,534−	680	412	18,122	666	406
29	19,214	682	426	18,788	668	421
30	19,896+	+0,685	−0,440	19,456	+0,670	−0,435
31	20,581	686	455	20,126	672	449
32	21,267+	689	469	20,798+	675	462
33	21,956	691	483	21,473	677	477
34	22,647	693	497	22,150−	679	491
35	23,340	+0,696	−0,511	22,829	+0,682	−0,505
36	24,036−	698	525	23,511−	684	519
37	24,734	701	539	24,195−	686	533
38	25,435−	703	554	24,881+	690	546
39	26,138−	706	567	25,571−	692	561
40	26,844−	+0,708	−0,581	26,263	+0,695	−0,574
41	27,552+	712	594	26,958−	698	588
42	28,264	714	608	27,656−	700	602
43	28,978+	718	622	28,356+	704	614
44	29,696−	720	636	29,060+	707	628
45	30,416	+0,724	−0,649	29,767	+0,710	−0,641

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	$e = 0{,}20$				$e = 0{,}21$			
v	$\log \frac{r}{a}$		D	D'	$\log \frac{r}{a}$		D	D'
0°	$\bar{1}$,90309	+	1	−546	$\bar{1}$,89763	−	1	−554
1	90310		3	546	89764		3	553
2	90313	+	6	546	89767	+	6	553
3	90319		8	546	89773		8	553
4	90327	−	10	546	89781		10	552
5	$\bar{1}$,90337	−	12	−546	$\bar{1}$,89791	+	13	−552
6	90349	−	14	545	89804		15	552
7	90363		17	544	89819		17	551
8	90380	−	18	544	89836		20	550
9	90398	+	21	542	89856	−	21	550
10	$\bar{1}$,90419	+	23	−542	$\bar{1}$,89877	+	24	−548
11	90442	+	25	541	89901	+	27	547
12	90467	+	28	539	89928	−	28	547
13	90495		30	539	89956	+	31	545
14	90525	−	31	538	89987		33	544
15	$\bar{1}$,90556	+	34	−536	$\bar{1}$,90020	+	36	−543
16	90590	+	36	534	90056	−	37	542
17	90626	+	39	533	90093	+	40	540
18	90665	−	40	532	90133		42	539
19	90705		43	530	90175	+	45	537
20	$\bar{1}$,90748	−	44	−528	$\bar{1}$,90220	−	46	−536
21	90792	+	47	526	90266	+	49	533
22	90839	+	49	524	90315		51	532
23	90888	+	51	522	90366		53	529
24	90939	+	54	520	90419	+	56	527
25	$\bar{1}$,90993	−	55	−518	$\bar{1}$,90475	−	57	−526
26	91048		57	516	90532	+	60	523
27	91105		60	513	90592		62	520
28	91165	−	61	511	90654		64	518
29	91226		64	508	90718		66	515
30	$\bar{1}$,91290	−	65	−506	$\bar{1}$,90784	+	69	−512
31	91355	+	68	502	90853		70	510
32	91423		70	500	90923	+	73	507
33	91493	−	71	497	90996		75	504
34	91564	+	74	493	91071		77	502
35	$\bar{1}$,91638	+	76	−490	$\bar{1}$,91148	−	79	−499
36	91714		78	487	91227	−	81	495
37	91792	−	79	484	91308	−	83	492
38	91871		82	480	91391	−	85	489
39	91953	−	83	477	91476	−	87	485
40	$\bar{1}$,92036	+	86	−473	$\bar{1}$,91563	+	89	−482
41	92122	−	87	470	91652		91	478
42	92209		89	466	91743	+	93	474
43	92298	+	92	462	91836	+	95	470
44	92390	−	93	459	91931	+	97	466
45	$\bar{1}$,92483	−	94	−455	$\bar{1}$,92028	+	99	−462

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	$e = 0{,}20$			$e = 0{,}21$		
v	M	D	D'	M	D	D'
45°	30°,416	+0°,724	−0°,649	29°,767	+0°,710	−0°,641
46	31,140−	726	663	30,477+	714	655
47	31,866+	730	675	31,191−	717	668
48	32,596+	734	688	31,908−	720	682
49	33,330−	736	702	32,628−	723	695
50	34,066+	+0,741	−0,715	33,351+	+0,728	−0,707
51	34,807−	744	728	34,079−	731	721
52	35,551−	747	741	34,810−	734	734
53	36,298	751	754	35,544+	739	746
54	37,049+	755	766	36,283	742	759
55	37,804+	+0,759	−0,779	37,025+	+0,747	−0,771
56	38,563+	763	791	37,772	750	784
57	39,326	767	804	38,522+	755	796
58	40,093	771	816	39,277	759	808
59	40,864	775	828	40,036	763	821
60	41,639+	+0,780	−0,840	40,799+	+0,768	−0,832
61	42,419	784	852	41,567	772	845
62	43,203−	788	864	42,339	777	856
63	43,991	793	875	43,116−	781	868
64	44,784−	797	887	43,897	786	880
65	45,581	+0,802	−0,898	44,683	+0,791	−0,891
66	46,383	807	909	45,474	796	902
67	47,190	812	920	46,270−	800	914
68	48,002	816	932	47,070+	806	924
69	48,818	822	942	47,876	811	935
70	49,640−	+0,826	−0,953	48,687	+0,816	−0,946
71	50,466+	832	963	49,503	822	956
72	51,298	837	973	50,325−	827	967
73	52,135	842	983	51,152−	832	978
74	52,977	848	0,993	51,984	838	987
75	53,825−	+0,853	−1,003	52,822−	+0,843	−0,997
76	54,678−	858	013	53,665+	850	1,006
77	55,536+	864	021	54,515−	855	017
78	56,400+	870	030	55,370−	861	026
79	57,270+	876	039	56,231−	867	035
80	58,146	+0,881	−1,048	57,098−	+0,873	−1,044
81	59,027+	888	056	57,971−	879	052
82	59,915−	893	065	58,850	885	061
83	60,808	899	073	59,735	892	068
84	61,707+	906	080	60,627	898	077
85	62,613	+0,912	−1,088	61,525	+0,904	−1,084
86	63,525−	918	096	62,429+	912	091
87	64,443	924	102	63,341−	917	099
88	65,367+	931	109	64,258+	925	106
89	66,298	937	115	65,183−	931	113
90	67,235+	+0,944	−1,121	66,114	+0,938	−1,119

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	$e = 0{,}20$			$e = 0{,}21$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}92483-$	$+94$	-455	$\bar{1}{,}92028+$	$+99$	-462
46	92577+	97	450	92127+	101	458
47	92674	98	446	92228+	103	454
48	92772+	101	441	92331	105	450
49	92873−	102	437	92436−	106	446
50	$\bar{1}{,}92975-$	$+104$	-433	$\bar{1}{,}92542+$	$+109$	-441
51	93079−	105	428	92651−	110	437
52	93184	107	423	92761−	112	432
53	93291+	109	418	92873−	113	427
54	93400	111	414	92986+	116	422
55	$\bar{1}{,}93511-$	$+112$	-409	$\bar{1}{,}93102$	$+117$	-418
56	93623	114	404	93219+	119	412
57	93737−	115	399	93338	121	407
58	93852+	117	393	93459−	122	403
59	93969+	119	388	93581	124	397
60	$\bar{1}{,}94088$	$+120$	-383	$\bar{1}{,}93705$	$+126$	-392
61	94208	122	377	93831−	127	387
62	94330−	123	372	93958−	128	381
63	94453−	124	367	94086+	131	375
64	94577+	126	360	94217−	131	370
65	$\bar{1}{,}94703$	$+128$	-355	$\bar{1}{,}94348+$	$+134$	-364
66	94831−	128	349	94482−	134	359
67	94959+	130	343	94616+	137	352
68	95089+	132	336	94753−	137	347
69	95221	133	331	94890	139	340
70	$\bar{1}{,}95354-$	$+134$	-325	$\bar{1}{,}95029$	$+140$	-334
71	95488−	135	319	95169	142	328
72	95623−	136	312	95311−	142	322
73	95759	138	306	95453+	144	315
74	95897−	138	300	95597+	146	308
75	$\bar{1}{,}96035+$	$+140$	-292	$\bar{1}{,}95743-$	$+146$	-303
76	96175	141	286	95889	148	296
77	96316	142	279	96037−	148	289
78	96458−	143	273	96185+	150	282
79	96601−	143	266	96335	151	275
80	$\bar{1}{,}96744+$	$+145$	-258	$\bar{1}{,}96486-$	$+151$	-269
81	96889	146	252	96637+	153	261
82	97035−	146	245	96790	154	254
83	97181+	148	237	96944−	154	248
84	97329−	148	231	97098+	156	240
85	$\bar{1}{,}97477-$	$+148$	-223	$\bar{1}{,}97254-$	$+156$	-233
86	97625+	150	215	97410−	157	226
87	97775	150	208	97567−	157	219
88	97925	151	201	97724	158	211
89	98076−	151	194	97882+	159	203
90	$\bar{1}{,}98227$	$+152$	-186	$\bar{1}{,}98041+$	$+160$	-196

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	$e = 0,20$			$e = 0,21$		
v	M	D	D'	M	D	D'
90°	67°,235+	+0°,944	−1°,121	66°,114	+0°,938	−1°,119
91	68,179+	951	127	67,052	945	125
92	69,130	957	133	67,997	952	131
93	70,087	964	138	68,949−	959	137
94	71,051	971	143	69,908−	966	142
95	72,022	+0,978	−1,148	70,874	+0,973	−1,147
96	73,000−	984	153	71,847+	981	151
97	73,984+	992	156	72,828	988	156
98	74,976	0,999	160	73,816	0,995	160
99	75,975	1,006	164	74,811+	1,003	163
100	76,981	+1,013	−1,167	75,814+	+1,011	−1,167
101	77,994	020	169	76,825−	018	170
102	79,014+	028	171	77,843	026	173
103	80,042	035	173	78,869−	033	175
104	81,077	042	175	79,902	041	177
105	82,119+	+1,050	−1,176	80,943	+1,049	−1,178
106	83,169	057	177	81,992	057	179
107	84,226+	065	177	83,049	065	180
108	85,291+	073	177	84,114	073	181
109	86,364−	080	177	85,187−	081	181
110	87,444−	+1,087	−1,176	86,268−	+1,088	−1,181
111	88,531+	096	175	87,356+	097	179
112	89,627−	103	174	88,453+	105	178
113	90,730−	110	172	89,558+	114	176
114	91,840+	119	168	90,672−	121	174
115	92,959−	+1,126	−1,166	91,793	+1,130	−1,171
116	94,085	134	162	92,923−	137	169
117	95,219−	142	159	94,060+	146	164
118	96,361−	149	155	95,206+	155	160
119	97,510	157	149	96,361−	162	156
120	98,667+	+1,166	−1,144	97,523+	+1,171	−1,151
121	99,833−	173	139	98,694+	179	146
122	101,006−	180	133	99,873+	188	139
123	102,186+	189	125	101,061	196	134
124	103,375−	196	118	102,257−	203	127
125	104,571	+1,204	−1,111	103,460+	+1,213	−1,119
126	105,775	212	102	104,673−	220	112
127	106,987	219	094	105,893	229	103
128	108,206+	227	084	107,122−	237	094
129	109,433+	235	074	108,359−	245	085
130	110,668+	+1,243	−1,064	109,604−	+1,253	−1,075
131	111,911−	250	054	110,857−	261	062
132	113,161−	257	043	112,118−	269	053
133	114,418	265	031	113,387	277	042
134	115,683	272	019	114,664	285	029
135	116,955+	+1,280	−1,006	115,949	+1,293	−1,017

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	e = 0,20			e = 0,21		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}$,98227	+152	−186	$\bar{1}$,98041+	+160	−196
91	98379	152	178	98201−	160	188
92	98531+	153	170	98361−	160	181
93	98684	153	163	98521+	161	173
94	98837+	154	155	98682	161	165
95	$\bar{1}$,98991	+154	−148	$\bar{1}$,98843+	+162	−157
96	99145−	154	140	99005	162	149
97	99299−	154	132	99167	162	141
98	99453	155	124	99329+	163	133
99	99608−	154	116	99492	163	126
100	$\bar{1}$,99762+	+155	−107	$\bar{1}$,99655−	+162	−118
101	$\bar{1}$,99917	155	100	99817+	163	109
102	0,00072−	154	92	$\bar{1}$,99980	163	101
103	00226+	155	83	0,00143	163	93
104	00381	154	75	00306−	162	85
105	0,00535+	+155	− 67	0,00468+	+163	− 76
106	00690	154	59	00631	162	69
107	00844	154	51	00793	162	60
108	00998−	153	43	00955	162	52
109	01151+	153	34	01117	161	44
110	0,01304+	+153	− 26	0,01278+	+161	− 35
111	01457	152	18	01439	161	27
112	01609+	152	9	01600−	160	19
113	01761	151	− 1	01760−	159	11
114	01912	150	+ 7	01919	159	− 2
115	0,02062+	+150	+ 16	0,02078−	+157	+ 6
116	02212	149	23	02235+	158	15
117	02361	148	32	02393−	156	22
118	02509+	148	40	02549	155	31
119	02657−	146	47	02704+	155	40
120	0,02803	+145	+ 56	0,02859	+153	+ 47
121	02948+	145	64	03012+	153	56
122	03093−	143	72	03165	151	64
123	03236	142	80	03316+	150	72
124	03378	141	88	03466+	149	81
125	0,03519	+139	+ 96	0,03615+	+148	+ 89
126	03658+	139	105	03763	146	96
127	03797−	137	112	03909	145	104
128	03934−	135	120	04054	143	112
129	04069+	134	128	04197	142	120
130	0,04203+	+133	+136	0,04339	+140	+128
131	04336−	131	143	04479	139	136
132	04467−	129	151	04618−	136	143
133	04596	127	158	04754+	135	152
134	04723+	126	166	04889+	133	159
135	0,04849	+124	+173	0,05022+	+132	+167

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	$e = 0,20$			$e = 0,21$		
v	M	D	D'	M	D	D'
135°	116°,955+	+1°,280	−1°,006	115°,949	+1°,293	−1°,017
136	118,235	287	0,993	117,242	301	1,004
137	119,522	294	979	118,543−	308	0,990
138	120,816	301	965	119,851	316	976
139	122,117	308	950	121,167	324	961
140	123,425+	+1,316	−0,934	122,491−	+1,331	−0,947
141	124,741−	322	919	123,822−	338	931
142	126,063−	329	903	125,160	345	914
143	127,392−	335	887	126,505+	353	897
144	128,727	342	869	127,858	360	880
145	130,069	+1,349	−0,851	129,218	+1,367	−0,862
146	131,418−	354	833	130,585−	373	844
147	132,772+	361	814	131,958	380	825
148	134,133+	368	795	133,338+	387	806
149	135,501−	373	776	134,725	393	786
150	136,874−	+1,379	−0,756	136,118	+1,400	−0,766
151	138,253−	384	735	137,518−	405	746
152	139,637	390	714	138,923	411	724
153	141,027	395	693	140,334+	418	702
154	142,422+	401	670	141,752−	423	681
155	143,823	+1,406	−0,648	143,175−	+1,428	−0,659
156	145,229	410	626	144,603	433	636
157	146,639+	416	603	146,036+	439	612
158	148,055−	419	580	147,475	444	589
159	149,474−	425	555	148,919−	448	565
160	150,899	+1,428	−0,532	150,367	+1,453	−0,540
161	152,327+	433	507	151,820	457	516
162	153,760−	436	483	153,277	461	491
163	155,196	440	458	154,738+	466	465
164	156,636	443	432	156,204−	468	440
165	158,079	+1,447	−0,407	157,672+	+1,473	−0,413
166	159,526−	449	381	159,145	476	387
167	160,975+	453	354	160,621−	478	361
168	162,428−	455	329	162,099+	482	333
169	163,883−	457	302	163,581	484	307
170	165,340	+1,460	−0,275	165,065+	+1,487	−0,279
171	166,800	461	248	166,552	489	252
172	168,261+	464	220	168,041−	490	225
173	169,725	465	194	169,531+	493	197
174	171,190	466	166	171,024	494	169
175	172,656+	+1,468	−0,138	172,518−	+1,495	−0,141
176	174,124−	468	111	174,013−	496	113
177	175,592	469	083	175,509−	496	085
178	177,061	469	056	177,005+	498	056
179	178,530+	470	027	178,503−	497	029
180	180,000	+1,470	−0,000	180,000	+1,497	−0,000

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	$e = 0{,}20$			$e = 0{,}21$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,04849	+124	+173	0,05022+	+132	+167
136	04973	122	181	05154−	129	173
137	05095	120	188	05283	127	181
138	05215+	118	195	05410	125	188
139	05333+	116	202	05535+	123	196
140	0,05449+	+115	+209	0,05658+	+121	+203
141	05564−	111	215	05779	119	210
142	05675+	110	223	05898−	116	216
143	05785	108	229	06014	114	223
144	05893−	105	235	06128	111	229
145	0,05998−	+102	+241	0,06239+	+109	+236
146	06100+	101	248	06348+	107	243
147	06201	98	254	06455	104	248
148	06299	95	260	06559	101	254
149	06394+	93	266	06660	99	261
150	0,06487+	+ 91	+272	0,06759−	+ 96	+266
151	06578−	87	277	06855−	93	272
152	06665+	86	283	06948	90	277
153	06751−	82	287	07038	88	283
154	06833	80	293	07126−	84	288
155	0,06913−	+ 76	+297	0,07210	+ 82	+293
156	06989+	74	303	07292−	79	298
157	07063+	72	308	07371+	75	302
158	07135−	68	311	07446	72	307
159	07203	65	315	07518+	70	312
160	0,07268+	+ 63	+320	0,07588	+ 66	+315
161	07331−	59	323	07654	63	320
162	07390	56	327	07717	60	324
163	07446+	54	331	07777	57	327
164	07500−	50	334	07834−	53	330
165	0,07550−	+ 47	+337	0,07887	+ 50	+334
166	07597	44	340	07937	47	337
167	07641−	41	343	07984−	43	339
168	07682−	37	345	08027	41	342
169	07719	35	349	08068	36	344
170	0,07754−	+ 31	+350	0,08104−	+ 33	+346
171	07785−	28	352	08137−	29	348
172	07813−	24	353	08166+	27	351
173	07837+	22	356	08193−	22	352
174	07859−	18	356	08215+	20	354
175	0,07877	+ 15	+358	0,08235−	+ 15	+354
176	07892−	11	358	08250+	13	356
177	07903+	9	360	08263−	9	356
178	07912−	4	360	08272−	5	357
179	07916+	+ 2	361	08277−	+ 2	357
180	0,07918	− 2	+361	0,08279−	− 2	+357

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	$e = 0{,}22$			$e = 0{,}23$		
v	M	D	D'	M	D	D'
0°	0°,000	+0°,624	−0°,000	0°,000	+0°,609	−0°,000
1	0,624−	623	015	0,609+	610	014
2	1,247+	624	028	1,219−	609	029
3	1,871+	624	043	1,828	610	043
4	2,495+	625	057	2,438−	610	057
5	3,120	+0,625	−0,072	3,048−	+0,610	−0,072
6	3,745−	625	087	3,658	611	086
7	4,370−	625	101	4,269−	611	100
8	4,995+	626	115	4,880−	612	114
9	5,621+	627	129	5,492−	612	129
10	6,248+	+0,628	−0,144	6,104	+0,613	−0,142
11	6,876−	628	159	6,717	614	156
12	7,504	629	173	7,331	614	171
13	8,133	630	188	7,945+	616	184
14	8,763	631	202	8,561	617	199
15	9,394	+0,632	−0,216	9,178−	+0,617	−0,214
16	10,026−	633	231	9,795+	619	227
17	10,659	634	245	10,414	620	242
18	11,293	636	259	11,034	621	256
19	11,929−	636	274	11,655	623	270
20	12,565+	+0,638	−0,287	12,278−	+0,624	−0,284
21	13,203+	640	301	12,902−	625	298
22	13,843	641	316	13,527	627	312
23	14,484+	643	330	14,154	628	326
24	15,127	644	345	14,782+	631	340
25	15,771+	+0,647	−0,358	15,413−	+0,632	−0,354
26	16,418−	648	373	16,045−	634	368
27	17,066−	650	387	16,679−	636	382
28	17,716−	651	401	17,315−	637	396
29	18,367+	654	415	17,952+	640	409
30	19,021+	+0,656	−0,429	18,592+	+0,642	−0,423
31	19,677+	659	443	19,234+	644	437
32	20,336−	660	458	19,878+	647	451
33	20,996	663	471	20,525	649	465
34	21,659	665	485	21,174	651	479
35	22,324	+0,668	−0,499	21,825+	+0,654	−0,492
36	22,992−	670	513	22,479+	657	506
37	23,662	673	526	23,136−	659	520
38	24,335	675	540	23,795	662	533
39	25,010+	679	553	24,457	665	547
40	25,689	+0,681	−0,567	25,122−	+0,667	−0,561
41	26,370	684	581	25,789+	671	573
42	27,054+	688	594	26,460	674	587
43	27,742−	690	608	27,134	677	601
44	28,432	694	621	27,811	680	614
45	29,126−	+0,696	−0,635	28,491	+0,684	−0,627

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	$e = 0{,}22$			$e = 0{,}23$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
0°	$\bar{1}{,}89209+$	+ 2	−560	$\bar{1}{,}88649$	+ 1	−568
1	89211 −	3	561	88650+	4	567
2	89214+	6	560	88654	6	568
3	89220	9	560	88660+	9	567
4	89229 −	10	560	88669	11	567
5	$\bar{1}{,}89239+$	+ 13	−559	$\bar{1}{,}88680$	+ 14	−567
6	89252+	16	558	88694 −	16	567
7	89268	18	558	88710 −	18	566
8	89286 −	20	558	88728	21	565
9	89306	23	557	88749	24	564
10	$\bar{1}{,}89329-$	+ 25	−556	$\bar{1}{,}88773-$	+ 25	−564
11	89354 −	27	556	88798 −	29	562
12	89381	30	554	88827	31	562
13	89411 −	32	553	88858 −	33	561
14	89443 −	34	552	88891	36	559
15	$\bar{1}{,}89477$	+ 37	−550	$\bar{1}{,}88927-$	+ 38	−558
16	89514	39	549	88965	40	557
17	89553	41	548	89005+	43	555
18	89594+	44	546	89048+	46	553
19	89638+	46	544	89094 −	48	552
20	$\bar{1}{,}89684+$	+ 49	−542	$\bar{1}{,}89142-$	+ 50	−551
21	89733 −	50	541	89192	52	549
22	89783+	54	539	89244+	55	546
23	89837 −	55	538	89299+	58	544
24	89892	57	535	89357	60	543
25	$\bar{1}{,}89949+$	+ 60	−532	$\bar{1}{,}89417-$	+ 62	−541
26	90009+	63	530	89479	64	538
27	90072 −	64	529	89543+	67	536
28	90136	67	526	89610+	69	533
29	90203 −	69	524	89679+	72	531
30	$\bar{1}{,}90272-$	+ 71	−521	$\bar{1}{,}89751$	+ 74	−529
31	90343 −	73	518	89825 −	76	526
32	90416	76	515	89901	78	523
33	90492 −	77	513	89979+	81	520
34	90569+	80	509	90060	83	517
35	$\bar{1}{,}90649+$	+ 83	−506	$\bar{1}{,}90143$	+ 85	−514
36	90732 −	84	504	90228+	88	511
37	90816 −	86	500	90316	90	508
38	90902+	89	496	90406 −	92	505
39	90991 −	90	493	90498 −	94	502
40	$\bar{1}{,}91081+$	+ 93	−489	$\bar{1}{,}90592$	+ 96	−498
41	91174+	95	486	90688+	99	494
42	91269	97	482	90787 −	100	491
43	91366	99	479	90887+	103	487
44	91465	101	475	90990+	105	483
45	$\bar{1}{,}91566$	+103	−471	$\bar{1}{,}91095+$	+107	−479

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	$e = 0{,}22$			$e = 0{,}23$		
v	M	D	D'	M	D	D'
45°	29°,126 −	+0°,696	−0°,635	28°,491	+0°,684	−0°,627
46	29,822 +	701	647	29,175 −	687	641
47	30,523 −	703	661	29,862 −	690	654
48	31,226	707	674	30,552	694	666
49	31,933 +	711	687	31,246 +	698	679
50	32,644	+0,714	−0,700	31,944	+0,701	−0,693
51	33,358 +	718	713	32,645 +	706	705
52	34,076 +	722	725	33,351 −	709	719
53	34,798 +	726	738	34,060	713	731
54	35,524 +	730	751	34,773	717	744
55	36,254	+0,734	−0,764	35,490 +	+0,722	−0,756
56	36,988	738	776	36,212	726	769
57	37,726 +	743	788	36,938 −	730	781
58	38,469 −	746	801	37,668 −	734	794
59	39,215 +	752	813	38,402 +	739	805
60	39,967 −	+0,755	−0,826	39,141 +	+0,744	−0,817
61	40,722 +	761	837	39,885	749	830
62	41,483 −	765	849	40,634 −	753	842
63	42,248 −	769	861	41,387 −	758	854
64	43,017 +	775	872	42,145	763	865
65	43,792	+0,780	−0,884	42,908	+0,768	−0,877
66	44,572 −	784	896	43,676 +	774	888
67	45,356	790	906	44,450 −	778	900
68	46,146	795	918	45,228	784	911
69	46,941 −	800	929	46,012	790	922
70	47,741	+0,806	−0,939	46,802 −	+0,795	−0,933
71	48,547 −	811	950	47,597 −	800	944
72	49,358 −	816	961	48,397	806	954
73	50,174 +	823	971	49,203 +	813	964
74	50,997 −	828	981	50,016 −	818	975
75	51,825 −	+0,834	−0,991	50,834 −	+0,824	−0,985
76	52,659 −	839	1,001	51,658 −	830	0,995
77	53,498 +	846	010	52,488	836	1,005
78	54,344 +	852	020	53,324 +	843	014
79	55,196 +	858	029	54,167	849	024
80	56,054 +	+0,865	−1,038	55,016	+0,856	−1,033
81	56,919 −	870	047	55,872 −	862	043
82	57,789 +	878	055	56,734 −	868	052
83	58,667 −	883	065	57,602 +	876	059
84	59,550 +	891	072	58,478	882	068
85	60,441 −	+0,897	−1,081	59,360 +	+0,890	−1,076
86	61,338 −	904	088	60,250 −	896	085
87	62,242 −	910	096	61,146	903	092
88	63,152 +	918	103	62,049 +	911	099
89	64,070	925	110	62,960	918	107
90	64,995 −	+0,932	−1,117	63,878 +	+0,926	−1,114

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	$e = 0{,}22$			$e = 0{,}23$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}91566$	+103	−471	$\bar{1}{,}91095+$	+107	−479
46	91669	105	467	91202+	110	475
47	91774	107	462	91312−	111	472
48	91881+	109	458	91423−	113	467
49	91990+	111	454	91536	115	463
50	$\bar{1}{,}92101$	+113	−450	$\bar{1}{,}91651+$	+118	−458
51	92214	115	445	91769−	119	454
52	92329	117	441	91888	121	450
53	92446+	118	437	92009+	124	445
54	92564	120	431	92133−	125	441
55	$\bar{1}{,}92684+$	+123	−426	$\bar{1}{,}92258$	+127	−436
56	92807−	124	422	92385	129	431
57	92931−	125	417	92514	131	426
58	93056+	128	411	92645	133	421
59	93184	129	406	92778−	134	416
60	$\bar{1}{,}93313$	+131	−401	$\bar{1}{,}92912$	+136	−410
61	93444	133	396	93048+	138	405
62	93577−	134	391	93186+	140	399
63	93711	136	385	93326+	142	394
64	93847	137	379	93468−	143	389
65	$\bar{1}{,}93984+$	+139	−373	$\bar{1}{,}93611$	+145	−383
66	94123+	141	367	93756−	146	378
67	94264	142	362	93902	148	371
68	94406	144	356	94050+	150	365
69	94550−	145	350	94200	151	360
70	$\bar{1}{,}94695-$	+146	−344	$\bar{1}{,}94351$	+153	−354
71	94841	148	337	94504−	154	348
72	94989	149	331	94658−	155	342
73	95138	151	325	94813	157	335
74	95289−	151	319	94970	158	328
75	$\bar{1}{,}95440+$	+153	−312	$\bar{1}{,}95128+$	+160	−322
76	95593+	155	305	95288	161	316
77	95748−	155	299	95449	162	309
78	95903	157	292	95611	163	302
79	96060−	157	286	95774+	165	295
80	$\bar{1}{,}96217+$	+159	−278	$\bar{1}{,}95939$	+165	−289
81	96376	160	272	96104+	167	281
82	96536−	160	265	96271+	168	274
83	96696+	162	257	96439	169	267
84	96858	163	250	96608	170	261
85	$\bar{1}{,}97021-$	+163	−243	$\bar{1}{,}96778-$	+170	−254
86	97184	164	236	96948+	172	246
87	97348+	165	228	97120	172	239
88	97513+	166	221	97292+	174	231
89	97679	166	213	97466−	174	224
90	$\bar{1}{,}97845+$	+168	−205	$\bar{1}{,}97640-$	+174	−216

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	$e = 0,22$			$e = 0,23$		
v	M	D	D'	M	D	D'
90°	64°,995 −	+0°,932	−1°,117	63°,878 +	+0°,926	−1°,114
91	65,927 −	939	123	64,804 −	933	121
92	66,866 −	946	129	65,737 −	940	127
93	67,812	954	135	66,677	948	133
94	68,766 −	961	141	67,625	956	139
95	69,727	+0,969	−1,146	68,581	+0,964	−1,145
96	70,696 −	976	151	69,545 −	971	150
97	71,672	984	156	70,516 +	980	154
98	72,656	992	160	71,496	988	159
99	73,648 −	0,999	164	72,484	0,996	164
100	74,647 +	+1,008	−1,167	73,480 −	+1,004	−1,168
101	75,655 −	015	171	74,484 −	012	172
102	76,670	024	174	75,496 +	021	174
103	77,694 −	031	177	76,517	029	178
104	78,725	040	179	77,546 −	038	180
105	79,765 −	+1,048	−1,181	78,584	+1,047	−1,182
106	80,813 −	056	182	79,631 −	055	185
107	81,869	064	183	80,686 −	063	186
108	82,933 +	073	184	81,749 +	073	187
109	84,006	081	184	82,822	081	188
110	85,087 +	+1,090	−1,184	83,903 +	+1,091	−1,188
111	86,177	098	183	84,994 −	099	188
112	87,275 +	107	182	86,093	108	187
113	88,382	116	181	87,201	117	186
114	89,498 −	124	180	88,318 +	127	184
115	90,622 −	+1,132	−1,177	89,445 −	+1,135	−1,183
116	91,754 +	142	174	90,580	145	180
117	92,896 −	150	171	91,725	153	178
118	94,046 −	159	168	92,878 +	163	174
119	95,205 −	167	164	94,041 +	173	170
120	96,372	+1,176	−1,158	95,214 −	+1,181	−1,166
121	97,548 +	186	153	96,395	191	161
122	98,734 −	193	148	97,586 −	200	156
123	99,927 +	203	141	98,786 −	209	150
124	101,130	211	135	99,995	218	144
125	102,341 +	+1,220	−1,128	101,213 +	+1,228	−1,136
126	103,561 +	229	120	102,441	237	129
127	104,790 +	238	112	103,678	246	121
128	106,028	246	104	104,924 +	256	113
129	107,274	255	094	106,180	265	104
130	108,529	+1,264	−1,084	107,445 −	+1,273	−1,095
131	109,793 −	272	075	108,718 +	283	084
132	111,065 −	280	064	110,001 +	292	073
133	112,345 +	290	052	111,293 +	301	062
134	113,635 −	297	041	112,594 +	311	050
135	114,932 +	+1,306	−1,027	113,905 −	+1,318	−1,039

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	$e = 0{,}22$			$e = 0{,}23$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}97845+$	+168	−205	$\bar{1}{,}97640-$	+174	−216
91	98013−	167	199	97814+	176	208
92	98180	168	190	97990−	176	201
93	98348+	169	182	98166−	176	194
94	98517	169	175	98342	177	185
95	$\bar{1}{,}98686+$	+170	−167	$\bar{1}{,}98519$	+177	−177
96	98856	170	160	98696+	178	169
97	99026−	170	152	98874+	178	161
98	99196	170	144	99052+	179	153
99	99366+	171	135	99231	179	145
100	$\bar{1}{,}99537$	+171	−127	$\bar{1}{,}99410-$	+179	−138
101	99708	171	119	99589−	179	130
102	$\bar{1}{,}99879-$	171	111	99768−	179	121
103	0,00050−	171	103	$\bar{1}{,}99947-$	179	113
104	00221−	171	95	0,00126	179	105
105	0,00392−	+170	− 87	0,00305	+179	− 96
106	00562+	171	78	00484	179	88
107	00733	170	70	00663	178	80
108	00903	170	62	00841+	179	71
109	01073	170	53	01020	178	63
110	0,01243−	+169	− 45	0,01198	+177	− 55
111	01412	169	37	01375+	178	46
112	01581−	168	28	01553−	176	38
113	01749	168	20	01729	176	29
114	01917−	167	12	01905	176	21
115	0,02084−	+166	− 3	0,02081−	+174	− 13
116	02250	165	+ 5	02255	174	− 4
117	02415+	165	14	02429	173	+ 5
118	02580	164	22	02602	172	13
119	02744−	162	30	02774	171	22
120	0,02906+	+162	+ 39	0,02945+	+170	+ 30
121	03068	161	47	03115+	169	39
122	03229	159	55	03284+	168	47
123	03388+	159	64	03452	167	55
124	03547−	157	72	03619−	165	63
125	0,03704−	+155	+ 80	0,03784−	+164	+ 72
126	03859+	154	89	03948−	162	80
127	04013+	153	97	04110	161	88
128	04166+	151	105	04271−	159	96
129	04317+	150	113	04430	158	105
130	0,04467	+148	+121	0,04588−	+155	+112
131	04615	146	128	04743−	154	121
132	04761	145	136	04897+	153	129
133	04906−	142	144	05050−	150	136
134	05048	141	152	05200	148	144
135	0,05189−	+138	+159	0,05348	+146	+152

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	$e = 0{,}22$			$e = 0{,}23$		
v	M	D	D'	M	D	D'
135°	114°,932+	+1°,306	−1°,027	113°,905−	+1°,318	−1°,039
136	116,238+	315	015	115,223+	328	025
137	117,553−	322	1,002	116,551+	337	1,012
138	118,875	331	0,987	117,888	345	0,999
139	120,206−	338	973	119,233	354	984
140	121,544+	+1,347	−0,957	120,587	+1,362	−0,969
141	122,891	355	942	121,949+	371	953
142	124,246−	362	926	123,320	379	937
143	125,608	370	909	124,699	387	920
144	126,978	378	892	126,086+	396	903
145	128,356−	+1,385	−0,874	127,482−	+1,403	−0,886
146	129,741−	392	856	128,885	411	867
147	131,133	399	837	130,296	419	848
148	132,532+	407	817	131,715	426	829
149	133,939−	413	798	133,141	434	809
150	135,352	+1,420	−0,777	134,575−	+1,440	−0,789
151	136,772	427	757	136,015+	448	767
152	138,199−	433	736	137,463+	455	746
153	139,632−	439	714	138,918	461	724
154	141,071−	445	692	140,379+	468	701
155	142,516	+1,451	−0,669	141,847+	+1,475	−0,679
156	143,967	457	645	143,322−	480	656
157	145,424	462	622	144,802	486	632
158	146,886+	468	598	146,288	492	608
159	148,354	473	574	147,780	497	583
160	149,827−	+1,477	−0,550	149,277+	+1,503	−0,558
161	151,304	482	524	150,780	508	533
162	152,786+	487	498	152,288−	512	507
163	154,273	491	473	153,800	517	481
164	155,764	495	447	155,317	522	454
165	157,259	+1,499	−0,420	156,839−	+1,525	−0,428
166	158,758−	502	394	158,364	529	401
167	160,260	506	367	159,893	533	373
168	161,766−	508	340	161,426	536	346
169	163,274	512	312	162,962	539	318
170	164,786	+1,514	−0,285	164,501	+1,542	−0,289
171	166,300−	516	257	166,043	544	261
172	167,816	518	229	167,587+	547	232
173	169,334+	521	200	169,134	549	204
174	170,855−	522	172	170,683−	550	175
175	172,377−	+1,523	−0,144	172,233	+1,552	−0,146
176	173,900−	524	115	173,785−	553	117
177	175,424	525	086	175,338−	553	088
178	176,949−	525	058	176,891+	554	058
179	178,474+	526	029	178,445+	555	029
180	180,000	+1,526	−0,000	180,000	+1,555	−0,000

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	$e = 0{,}22$			$e = 0{,}23$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,05189 −	+138	+159	0,05348	+146	+152
136	05327 +	137	167	05494 +	144	160
137	05464	134	174	05638 +	142	168
138	05598 +	133	182	05780	140	175
139	05731 −	130	189	05920 −	137	182
140	0,05861 −	+128	+196	0,06057	+135	+190
141	05989 −	125	203	06192 −	132	197
142	06114	123	210	06324	130	204
143	06237	120	217	06454	127	211
144	06357 +	118	224	06581	125	218
145	0,06475 +	+116	+231	0,06706 −	+121	+224
146	06591 −	112	236	06827 +	120	232
147	06703 +	110	244	06947 −	116	237
148	06813 +	108	250	07063 −	113	244
149	06921 −	104	255	07176	110	250
150	0,07025	+102	+261	0,07286 +	+108	+257
151	07127 −	98	267	07394 −	104	262
152	07225 +	96	273	07498	101	268
153	07321	93	278	07599	98	274
154	07414 −	89	283	07697	95	279
155	0,07503 +	+ 87	+289	0,07792 −	+ 91	+284
156	07590 −	83	293	07883 +	88	289
157	07673	80	298	07971 +	85	294
158	07753	77	303	08056	81	299
159	07830	73	307	08137 +	78	304
160	0,07903 +	+ 71	+312	0,08215	+ 74	+308
161	07974 −	67	315	08289 +	71	312
162	08041 −	63	319	08360	67	316
163	08104	60	323	08427 +	64	320
164	08164	57	327	08491	60	323
165	0,08221 −	+ 53	+330	0,08551 −	+ 56	+326
166	08274 −	49	333	08607	52	330
167	08323	46	336	08659 +	50	333
168	08369	43	340	08709	44	334
169	08412 −	38	341	08753	41	338
170	0,08450 +	+ 35	+344	0,08794	+ 37	+340
171	08485 +	32	346	08831	33	343
172	08517	28	347	08864 +	30	345
173	08545 −	24	349	08894	26	346
174	08569	20	351	08920 −	21	347
175	0,08589 +	+ 17	+352	0,08941	+ 18	+349
176	08606	13	353	08959	14	350
177	08619	10	354	08973 −	10	350
178	08629 −	5	354	08983 −	6	351
179	08634	+ 2	355	08989 −	+ 2	351
180	0,08636	− 2	+355	0,08991 −	− 2	+351

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	$e = 0,24$			$e = 0,25$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+0,595	−0,000	0,000	+0,581	−0,000
1	0,595	595	014	0,581	581	014
2	1,190	595	028	1,162	581	028
3	1,785+	596	042	1,743	582	041
4	2,381−	595	056	2,325−	581	056
5	2,976+	+0,596	−0,070	2,906+	+0,582	−0,069
6	3,572+	597	084	3,488+	583	083
7	4,169	597	098	4,071−	583	097
8	4,766	597	112	4,654−	583	111
9	5,363+	599	126	5,237	584	124
10	5,962−	+0,599	−0,141	5,821+	+0,585	−0,138
11	6,561+	599	155	6,406	586	152
12	7,160	601	168	6,992	586	166
13	7,761−	601	183	7,578+	588	179
14	8,362	602	196	8,166−	588	194
15	8,964+	+0,604	−0,210	8,754	+0,590	−0,207
16	9,568	604	224	9,344−	590	222
17	10,172+	606	238	9,934+	592	235
18	10,778+	607	252	10,526	593	249
19	11,385+	609	266	11,119+	595	262
20	11,994−	+0,610	−0,280	11,714−	+0,596	−0,276
21	12,604−	611	294	12,310−	597	290
22	13,215	613	308	12,907+	599	303
23	13,828	614	322	13,506+	601	317
24	14,442+	617	335	14,107	602	331
25	15,059−	+0,618	−0,350	14,709+	+0,605	−0,344
26	15,677	620	363	15,314−	606	359
27	16,297−	622	377	15,920	608	372
28	16,919−	624	391	16,528	610	386
29	17,543−	626	405	17,138	612	399
30	18,169−	+0,628	−0,419	17,750+	+0,615	−0,412
31	18,797−	630	432	18,365	617	426
32	19,427+	633	445	18,982−	619	440
33	20,060	635	459	19,601	621	454
34	20,695	638	473	20,222+	624	466
35	21,333	+0,640	−0,487	20,846+	+0,627	−0,480
36	21,973	643	500	21,473	630	494
37	22,616	646	513	22,103−	632	508
38	23,262−	648	527	22,735−	635	521
39	23,910	651	540	23,370−	637	534
40	24,561+	+0,655	−0,554	24,007+	+0,641	−0,547
41	25,216−	657	568	24,648+	644	560
42	25,873	660	581	25,292+	648	573
43	26,533+	664	593	25,940−	650	587
44	27,197	667	607	26,590	654	600
45	27,864	+0,670	−0,620	27,244−	+0,657	−0,613

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	$e = 0{,}24$			$e = 0{,}25$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
0°	$\bar{1}{,}88081+$	$+2$	-575	$\bar{1}{,}87506$	$+1$	-583
1	88083 −	3	576	87507 +	4	582
2	88086 +	7	575	87511 +	7	582
3	88093	9	575	87518	10	583
4	88102	11	574	87528	11	583
5	$\bar{1}{,}88113+$	$+14$	-574	$\bar{1}{,}87539$	$+15$	-582
6	88127 +	17	573	87554 −	17	582
7	88144	19	573	87571	20	581
8	88163 +	22	572	87591 −	22	581
9	88185	24	572	87613	25	579
10	$\bar{1}{,}88209+$	$+27$	-571	$\bar{1}{,}87638+$	$+28$	-578
11	88236	29	570	87666	30	578
12	88265 +	32	569	87696 +	33	577
13	88297 +	35	568	87729 +	36	576
14	88332 −	37	567	87765	38	575
15	$\bar{1}{,}88369-$	$+39$	-566	$\bar{1}{,}87803$	$+41$	-573
16	88408 +	42	564	87844	43	572
17	88450	45	563	87887 +	46	570
18	88495 −	47	562	87933 +	49	569
19	88542 −	49	560	87982	51	568
20	$\bar{1}{,}88591+$	$+52$	-558	$\bar{1}{,}88033$	$+54$	-566
21	88643 +	55	556	88087	56	565
22	88698 −	57	555	88143 +	59	562
23	88755 −	59	553	88202	62	561
24	88814 +	62	550	88264 −	64	559
25	$\bar{1}{,}88876$	$+65$	-548	$\bar{1}{,}88328-$	$+66$	-557
26	88941 −	66	547	88394 +	69	554
27	89007 +	70	544	88463 +	72	552
28	89077 −	71	542	88535	74	550
29	89148 +	74	539	88609	77	547
30	$\bar{1}{,}89222+$	$+77$	-536	$\bar{1}{,}88686-$	$+79$	-545
31	89299	79	534	88765	81	543
32	89378	81	532	88846 +	85	539
33	89459	84	528	88931 −	86	537
34	89543 −	86	526	89017	89	534
35	$\bar{1}{,}89629-$	$+88$	-523	$\bar{1}{,}89106$	$+91$	-531
36	89717	91	520	89197 +	94	528
37	89808	93	517	89291 +	97	525
38	89901	95	513	89388 −	98	522
39	89996 +	98	510	89486 +	101	518
40	$\bar{1}{,}90094$	$+100$	-507	$\bar{1}{,}89587+$	$+104$	-515
41	90194 −	102	503	89691 −	105	512
42	90296	104	500	89796 +	109	508
43	90400 +	107	495	89905 −	110	505
44	90507	109	492	90015	113	501
45	$\bar{1}{,}90616$	$+111$	-488	$\bar{1}{,}90128-$	$+115$	-497

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	$e = 0{,}24$			$e = 0{,}25$		
v	M	D	D'	M	D	D'
45°	27°,864	+0°,670	−0°,620	27°,244−	+0°,657	−0°,613
46	28,534+	674	633	27,901	661	626
47	29,208	678	646	28,562−	664	639
48	29,886−	681	660	29,226	668	652
49	30,567−	684	673	29,894+	672	665
50	31,251+	+0,689	−0,685	30,566	+0,676	−0,678
51	31,940	692	698	31,242−	679	691
52	32,632+	697	711	31,921+	684	703
53	33,329	700	724	32,605+	688	716
54	34,029+	705	736	33,293	692	728
55	34,734	+0,709	−0,749	33,985+	+0,697	−0,741
56	35,443	714	761	34,682	701	754
57	36,157−	717	774	35,383	705	766
58	36,874+	723	786	36,088+	710	778
59	37,597−	727	799	36,798+	715	790
60	38,324−	+0,731	−0,811	37,513+	+0,720	−0,803
61	39,055+	737	822	38,233	724	815
62	39,792	741	835	38,957+	730	827
63	40,533+	747	846	39,687	735	839
64	41,280−	751	858	40,422−	739	851
65	42,031+	+0,757	−0,870	41,161−	+0,746	−0,862
66	42,788	762	881	41,907	750	874
67	43,550	767	893	42,657+	757	885
68	44,317+	773	903	43,414−	761	897
69	45,090+	779	915	44,175+	768	908
70	45,869	+0,784	−0,926	44,943	+0,773	−0,919
71	46,653	790	937	45,716	779	930
72	47,443	796	948	46,495+	786	941
73	48,239	802	958	47,281−	791	952
74	49,041−	808	969	48,072	797	963
75	49,849−	+0,814	−0,980	48,869+	+0,804	−0,972
76	50,663−	820	990	49,673+	811	983
77	51,483	827	0,999	50,484	817	0,994
78	52,310−	833	1,009	51,301−	823	1,004
79	53,143	840	019	52,124+	831	013
80	53,983−	+0,846	−1,028	52,955−	+0,837	−1,023
81	54,829+	853	037	53,792	844	032
82	55,682+	861	046	54,636	851	041
83	56,543−	867	056	55,487+	859	050
84	57,410−	874	064	56,346	866	060
85	58,284	+0,881	−1,072	57,212−	+0,873	−1,068
86	59,165+	889	080	58,085−	880	077
87	60,054	896	089	58,965+	889	084
88	60,950	903	096	59,854−	896	093
89	61,853+	911	103	60,750−	903	101
90	62,764+	+0,919	−1,111	61,653+	+0,912	−1,108

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	$e = 0{,}24$			$e = 0{,}25$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}90616$	+111	−488	$\bar{1}{,}90128-$	+115	−497
46	90727	113	484	90243−	117	493
47	90840+	116	480	90360	120	489
48	90956−	117	476	90480−	121	486
49	91073	120	472	90601+	124	481
50	$\bar{1}{,}91193$	+122	−468	$\bar{1}{,}90725+$	+126	−476
51	91315−	123	464	90851+	129	472
52	91438+	126	458	90980−	130	468
53	91564+	128	454	91110+	133	464
54	91692+	130	449	91243	135	459
55	$\bar{1}{,}91822+$	+132	−444	$\bar{1}{,}91378-$	+136	−455
56	91954+	134	440	91514+	139	449
57	92088+	136	435	91653	141	444
58	92224	138	430	91794	143	440
59	92362	140	425	91937	145	435
60	$\bar{1}{,}92502-$	+141	−420	$\bar{1}{,}92082$	+147	−430
61	92643+	144	414	92229−	149	425
62	92787−	145	409	92378−	150	419
63	92932	147	404	92528+	153	413
64	93079	149	398	92681−	154	408
65	$\bar{1}{,}93228$	+150	−393	$\bar{1}{,}92835$	+156	−402
66	93378+	153	387	92991+	158	396
67	93531−	154	382	93149+	160	391
68	93685−	155	376	93309+	162	385
69	93840+	157	369	93471−	163	380
70	$\bar{1}{,}93997+$	+159	−363	$\bar{1}{,}93634$	+165	−374
71	94156	160	357	93799	166	368
72	94316+	162	351	93965+	168	361
73	94478+	164	345	94133+	170	355
74	94642−	164	339	94303	171	349
75	$\bar{1}{,}94806+$	+166	−332	$\bar{1}{,}94474+$	+173	−342
76	94972+	168	325	94647	174	336
77	95140	169	319	94821	175	329
78	95309−	170	313	94996+	177	322
79	95479	171	306	95173+	179	316
80	$\bar{1}{,}95650+$	+173	−298	$\bar{1}{,}95352-$	+179	−310
81	95823	174	292	95531	181	302
82	95997−	175	285	95712−	182	296
83	96172−	175	278	95894−	183	289
84	96347+	177	270	96077	184	281
85	$\bar{1}{,}96524+$	+178	−263	$\bar{1}{,}96261$	+185	−274
86	96702+	179	256	96446+	187	266
87	96881+	180	248	96633−	187	260
88	97061+	181	241	96820	188	252
89	97242	182	234	97008	189	244
90	$\bar{1}{,}97424-$	+182	−227	$\bar{1}{,}97197$	+190	−237

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	$e = 0,24$			$e = 0,25$		
v	M	D	D'	M	D	D'
90°	62°,764+	+0°,919	−1°,111	61°,653+	+0°,912	−1°,108
91	63,683	927	118	62,565	920	115
92	64,610−	934	125	63,485	928	122
93	65,544	942	131	64,413−	936	129
94	66,486	950	137	65,349−	944	136
95	67,436+	+0,959	−1,143	66,293+	+0,953	−1,142
96	68,395	967	149	67,246	961	148
97	69,362−	975	155	68,207+	970	153
98	70,337−	983	160	69,177+	979	158
99	71,320	0,992	164	70,156	988	163
100	72,312	+1,000	−1,168	71,144−	+0,996	−1,168
101	73,312+	010	172	72,140+	1,006	172
102	74,322+	017	176	73,146−	014	177
103	75,339+	027	179	74,160+	024	180
104	76,366	036	182	75,184	033	183
105	77,402−	+1,044	−1,185	76,217	+1,042	−1,186
106	78,446	054	187	77,259+	052	189
107	79,500−	062	189	78,311	061	191
108	80,562+	072	190	79,372+	071	192
109	81,634+	081	191	80,443+	081	194
110	82,715+	+1,091	−1,191	81,524	+1,090	−1,195
111	83,806	100	192	82,614	100	196
112	84,906−	109	192	83,714+	110	196
113	86,015	119	191	84,824+	120	195
114	87,134−	128	190	85,944	130	195
115	88,262	+1,138	−1,188	87,074	+1,140	−1,194
116	89,400	147	186	88,214	150	192
117	90,547+	157	183	89,364	160	190
118	91,704+	167	180	90,524	170	187
119	92,871	177	177	91,694+	181	184
120	94,048−	+1,186	−1,173	92,875−	+1,190	−1,180
121	95,234	196	169	94,065+	201	176
122	96,430	206	164	95,266+	212	171
123	97,636−	215	158	96,478−	221	166
124	98,851+	226	152	97,699+	232	160
125	100,077−	+1,235	−1,146	98,931+	+1,242	−1,154
126	101,312	245	139	100,173+	253	147
127	102,557−	254	131	101,426	263	140
128	103,811+	265	122	102,689	273	132
129	105,076	274	114	103,962	284	124
130	106,350	+1,284	−1,104	105,246−	+1,293	−1,115
131	107,634	294	095	106,539+	304	105
132	108,928−	303	085	107,843+	314	095
133	110,231−	313	074	109,157+	325	084
134	111,544−	322	062	110,482−	334	073
135	112,866	+1,332	−1,050	111,816	+1,345	−1,061

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	e = 0,24			e = 0,25		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}$,97424 −	+182	−227	$\bar{1}$,97197	+190	−237
91	97606	183	219	97387	191	229
92	97789	183	211	97578 −	191	222
93	97972 +	185	203	97769	192	214
94	98157 −	185	196	97961	193	206
95	$\bar{1}$,98342 −	+185	−188	$\bar{1}$,98154	+193	−198
96	98527	186	180	98347	194	190
97	98713 −	186	172	98541	194	182
98	98899	187	164	98735	195	174
99	99086 +	186	156	98930 −	195	166
100	$\bar{1}$,99272 +	+187	−147	$\bar{1}$,99125 −	+195	−158
101	99459 +	188	139	99320	195	150
102	99647 −	187	132	99515 +	196	141
103	$\bar{1}$,99834	187	125	99711	196	133
104	0,00021 +	188	114	$\bar{1}$,99907 −	195	125
105	0,00209 −	+187	−107	0,00102 +	+196	−116
106	00396	187	98	00298	195	108
107	00583	187	90	00493 +	196	99
108	00770	187	81	00689	195	91
109	00957	186	73	00884	195	83
110	0,01143 +	+186	− 64	0,01079	+195	− 74
111	01329 +	186	55	01274 −	194	66
112	01515	185	47	01468 −	193	57
113	01700	184	39	01661 +	193	48
114	01884 +	184	30	01854 +	193	40
115	0,02068 +	+183	− 21	0,02047 −	+191	− 32
116	02251 +	183	13	02238 +	191	22
117	02434 −	181	− 5	02429	190	14
118	02615	181	+ 4	02619	189	− 5
119	02796 −	179	12	02808 +	188	+ 4
120	0,02975 +	+179	+ 21	0,02996 +	+187	+ 12
121	03154 −	177	29	03183 +	186	21
122	03331	176	38	03369	185	29
123	03507 +	175	47	03554	183	38
124	03682	174	55	03737	182	46
125	0,03856 −	+172	+ 63	0,03919	+181	+ 55
126	04028 −	170	72	04100 −	178	63
127	04198 +	169	80	04278 +	178	72
128	04367 +	168	89	04456 −	175	80
129	04535 −	165	96	04631 +	174	89
130	0,04700 +	+164	+105	0,04805 +	+172	+ 97
131	04864	162	113	04977 +	170	106
132	05026 +	160	121	05147 +	168	114
133	05186 +	158	129	05315 +	167	122
134	05344 +	156	138	05482 −	163	129
135	0,05500 +	+154	+145	0,05645 +	+162	+138

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	$e = 0,24$			$e = 0,25$		
v	M	D	D'	M	D	D'
135°	112°,866	+1°,332	−1°,050	111°,816	+1°,345	−1°,061
136	114,198−	341	037	113,161−	354	049
137	115,539	350	024	114,515	364	035
138	116,889+	360	1,010	115,879+	374	021
139	118,249	369	0,996	117,253+	384	1,007
140	119,618	+1,378	−0,981	118,637+	+1,394	−0,992
141	120,996	387	965	120,031−	403	977
142	122,383	396	949	121,434	412	961
143	123,779−	404	933	122,846+	422	944
144	125,183	413	915	124,268	431	927
145	126,596+	+1,422	−0,897	125,699	+1,440	−0,909
146	128,018	430	879	127,139	449	891
147	129,448−	438	860	128,588−	457	872
148	130,886	446	841	130,045+	466	852
149	132,332	454	821	131,511+	475	832
150	133,786	+1,462	−0,800	132,986	+1,483	−0,812
151	135,248	469	779	134,469	491	791
152	136,717	477	757	135,960−	498	769
153	138,194−	484	736	137,458+	507	746
154	139,678−	490	713	138,965	514	724
155	141,168+	+1,498	−0,689	140,479−	+1,521	−0,701
156	142,666	504	666	142,000−	528	677
157	144,170	510	642	143,528−	535	653
158	145,680+	517	617	145,063−	541	628
159	147,197	522	593	146,604	548	603
160	148,719	+1,528	−0,567	148,152−	+1,553	−0,577
161	150,247+	534	542	149,705+	560	550
162	151,781−	538	516	151,265	565	524
163	153,319+	544	489	152,830	570	497
164	154,863−	548	463	154,400+	576	470
165	156,411	+1,552	−0,435	155,976−	+1,580	−0,443
166	157,963+	557	407	157,556−	584	415
167	159,520	560	380	159,140	589	386
168	161,080+	564	351	160,729−	592	358
169	162,644+	568	323	162,321	596	329
170	164,212−	+1,570	−0,295	163,917	+1,599	−0,300
171	165,782	573	266	165,516	602	271
172	167,355−	575	237	167,118	604	241
173	168,930	578	208	168,722+	607	211
174	170,508−	579	179	170,329+	609	181
175	172,087	+1,581	−0,149	171,938	+1,611	−0,151
176	173,668−	582	119	173,549−	611	122
177	175,250−	583	090	175,160+	613	091
178	176,833−	583	060	176,773	613	061
179	178,416	584	030	178,386+	614	030
180	180,000	+1,584	−0,000	180,000	+1,614	−0,000

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	$e = 0{,}24$			$e = 0{,}25$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,05500+	+154	+145	0,05645+	+162	+138
136	05654	152	153	05807	159	146
137	05806−	149	160	05966+	157	154
138	05955	147	168	06123+	155	162
139	06102	145	176	06278−	152	169
140	0,06247−	+142	+183	0,06430−	+149	+176
141	06389−	139	190	06579	147	184
142	06528	137	198	06726−	144	191
143	06665	134	205	06870−	141	198
144	06799	131	212	07011−	138	205
145	0,06930	+129	+219	0,07149	+135	+213
146	07059−	125	225	07284	132	220
147	07184	123	232	07416	129	227
148	07307−	119	238	07545	126	233
149	07426	117	245	07671	123	240
150	0,07543−	+113	+251	0,07794−	+119	+245
151	07656	110	257	07913	116	252
152	07766	107	263	08029−	112	258
153	07873−	103	268	08141	109	264
154	07976	100	274	08250	105	270
155	0,08076	+ 96	+279	0,08355+	+102	+275
156	08172+	93	285	08457	98	281
157	08265+	90	290	08555	94	286
158	08355	86	294	08649+	91	291
159	08441−	82	299	08740	87	295
160	0,08523	+ 78	+304	0,08827−	+ 82	+299
161	08601+	75	308	08909+	79	305
162	08676	71	312	08988	75	309
163	08747	67	316	09063	71	312
164	08814	63	320	09134−	67	316
165	0,08877+	+ 60	+324	0,09201−	+ 62	+319
166	08937−	55	326	09263	59	323
167	08992	51	330	09322−	54	326
168	09043+	48	333	09376−	50	329
169	09091	43	335	09426	46	332
170	0,09134+	+ 40	+338	0,09472−	+ 41	+334
171	09174−	35	339	09513	37	337
172	09209	31	341	09550+	33	339
173	09240	27	343	09583+	29	340
174	09267	23	345	09612−	24	342
175	0,09290	+ 19	+346	0,09636	+ 20	+343
176	09309−	14	347	09656−	15	344
177	09323+	11	348	09671	11	345
178	09334	6	348	09682	7	346
179	09340	+ 2	349	09689	+ 2	346
180	0,09342	− 2	+349	0,09691	− 2	+346

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	$e = 0{,}26$			$e = 0{,}27$		
v	M	D	D'	M	D	D'
0°	0°,000	+0°,567	−0°,000	0°,000	+0°,553	−0°,000
1	0,567	567	014	0,553+	554	013
2	1,134+	568	027	1,107	554	027
3	1,702−	567	041	1,661−	554	041
4	2,269	568	054	2,215−	554	054
5	2,837	+0,568	−0,068	2,769−	+0,554	−0,067
6	3,405	569	082	3,323+	555	080
7	3,974	569	096	3,878+	556	094
8	4,543	570	109	4,434−	556	108
9	5,113−	570	123	4,990	557	121
10	5,683	+0,571	−0,136	5,547−	+0,557	−0,135
11	6,254	572	150	6,104	558	148
12	6,826	573	164	6,662	559	161
13	7,399−	573	178	7,221+	560	175
14	7,972	575	191	7,781+	561	188
15	8,547−	+0,575	−0,205	8,342+	+0,562	−0,201
16	9,122+	577	218	8,904+	564	215
17	9,699+	578	231	9,468−	564	229
18	10,277+	580	245	10,032	566	242
19	10,857	581	259	10,598	567	255
20	11,438−	+0,582	−0,273	11,165+	+0,569	−0,268
21	12,020	584	286	11,734	570	282
22	12,604−	585	300	12,304	572	295
23	13,189	587	313	12,876	573	309
24	13,776	589	327	13,449+	576	322
25	14,365−	+0,590	−0,340	14,025−	+0,577	−0,336
26	14,955+	593	353	14,602−	579	349
27	15,548	594	367	15,181	581	362
28	16,142+	597	380	15,762	583	376
29	16,739	599	394	16,345	585	389
30	17,338−	+0,601	−0,408	16,930+	+0,588	−0,402
31	17,939−	603	421	17,518−	590	416
32	18,542	605	434	18,108−	592	429
33	19,147+	609	447	18,700	595	442
34	19,756−	610	461	19,295−	597	456
35	20,366	+0,613	−0,474	19,892	+0,600	−,0468
36	20,979+	616	487	20,492−	602	482
37	21,595+	619	501	21,094+	606	494
38	22,214	622	514	21,700	608	508
39	22,836−	624	528	22,308+	612	521
40	23,460+	+0,628	−0,540	22,920−	+0,614	−0,534
41	24,088	631	554	23,534	618	547
42	24,719−	634	567	24,152	621	560
43	25,353−	637	580	24,773−	624	573
44	25,990	641	593	25,397	628	586
45	26,631−	+0,644	−0,606	26,025−	+0,631	−0,600

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	$e = 0{,}26$			$e = 0{,}27$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
0°	$\bar{1}{,}86923$	+ 2	−591	$\bar{1}{,}86332+$	+ 2	−599
1	86925−	4	591	86334−	4	599
2	86929−	6	591	86338	7	599
3	86935+	10	590	86345	10	599
4	86945	12	590	86355−	12	599
5	$\bar{1}{,}86957+$	+ 15	−590	$\bar{1}{,}86367+$	+ 16	−598
6	86972+	18	589	86383	18	598
7	86990	20	589	86401	21	597
8	87010+	24	588	86422+	24	596
9	87034−	26	588	86446	27	596
10	$\bar{1}{,}87060-$	+ 28	−587	$\bar{1}{,}86473-$	+ 29	−595
11	87088	31	586	86502+	33	594
12	87119+	34	584	86535−	35	594
13	87153+	37	583	86570−	37	593
14	87190	40	583	86607+	41	591
15	$\bar{1}{,}87230-$	+ 42	−582	$\bar{1}{,}86648$	+ 43	−590
16	87272−	45	581	86691−	47	588
17	87317−	47	579	86738−	49	588
18	87364	50	577	86787−	51	586
19	87414	53	576	86838+	55	584
20	$\bar{1}{,}87467$	+ 55	−574	$\bar{1}{,}86893-$	+ 57	−583
21	87522+	59	572	86950	60	581
22	87581−	60	571	87010	63	579
23	87641+	64	568	87073−	65	578
24	87705	66	567	87138	68	575
25	$\bar{1}{,}87771$	+ 69	−565	$\bar{1}{,}87206$	+ 71	−573
26	87840−	71	563	87277	73	571
27	87911	74	561	87350+	77	569
28	87985	77	558	87427−	79	567
29	88062−	79	556	87506−	81	565
30	$\bar{1}{,}88141-$	+ 81	−554	$\bar{1}{,}87587+$	+ 85	−562
31	88222+	85	550	87672−	86	560
32	88307−	87	549	87758+	90	557
33	88394−	89	546	87848	92	554
34	88483	92	543	87940+	95	551
35	$\bar{1}{,}88575$	+ 94	−540	$\bar{1}{,}88035$	+ 97	−549
36	88669+	97	537	88132+	100	545
37	88766+	100	534	88232+	103	542
38	88866−	102	531	88335	105	540
39	88968−	104	528	88440+	108	536
40	$\bar{1}{,}89072$	+107	−524	$\bar{1}{,}88548$	+110	−533
41	89179	109	521	88658+	113	530
42	89288+	112	517	88771	115	526
43	89400	114	514	88886+	118	522
44	89514	117	510	89004	120	519
45	$\bar{1}{,}89631-$	+119	−507	$\bar{1}{,}89124+$	+123	−515

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	e = 0,26			e = 0,27		
v	M	D	D'	M	D	D'
45°	26°,631 −	+0°,644	−0°,606	26°,025 −	+0°,631	−0°,600
46	27,275	648	619	26,656 −	635	612
47	27,923 −	651	632	27,291 −	638	625
48	28,574	655	645	27,929	642	638
49	29,229	659	658	28,571 +	647	650
50	29,888	+0,663	−0,670	29,218 −	+0,650	−0,664
51	30,551	667	683	29,868 −	654	676
52	31,218	671	696	30,522	658	689
53	31,889	676	709	31,180 +	663	701
54	32,565 +	679	722	31,843	667	714
55	33,244	+0,684	−0,734	32,510	+0,672	−0,726
56	33,928	689	746	33,182 −	676	739
57	34,617 −	693	759	33,858	681	751
58	35,310 −	698	771	34,539 −	685	764
59	36,008 −	702	784	35,224 +	691	776
60	36,710 +	+0,708	−0,795	35,915 −	+0,695	−0,788
61	37,418	712	808	36,610 −	701	800
62	38,130 +	718	819	37,311 −	705	813
63	38,848	723	832	38,016 +	712	824
64	39,571	728	843	38,728 −	716	837
65	40,299	+0,734	−0,855	39,444	+0,722	−0,848
66	41,033 −	739	867	40,166	727	860
67	41,772	745	879	40,893 +	734	871
68	42,517 −	750	890	41,627 −	739	883
69	43,267	757	901	42,366	745	894
70	44,024 −	+0,762	−0,913	43,111	+0,751	−0,906
71	44,786	768	924	43,862 +	758	917
72	45,554	775	934	44,620 −	763	928
73	46,329 −	780	946	45,383	770	939
74	47,109 +	788	956	46,153 +	777	949
75	47,897 −	+0,793	−0,967	46,930 −	+0,783	−0,961
76	48,690 +	800	977	47,713	790	971
77	49,490 +	807	987	48,503	797	982
78	50,297 +	814	0,997	49,300 −	804	0,992
79	51,111 +	821	1,007	50,104 −	810	1,002
80	51,932	+0,828	−1,018	50,914 +	+0,819	−1,011
81	52,760 −	835	027	51,733 −	825	022
82	53,595 −	842	037	52,558	833	031
83	54,437	849	046	53,391	841	041
84	55,286 +	858	054	54,232 −	848	051
85	56,144 −	+0,864	−1,064	55,080 −	+0,856	−1,060
86	57,008 +	873	072	55,936 −	864	068
87	57,881 −	880	081	56,800 −	872	077
88	58,761	888	089	57,672 −	880	086
89	59,649	896	097	58,552	888	094
90	60,545 +	+0,905	−1,105	59,440 +	+0,897	−1,101

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	$e = 0{,}26$			$e = 0{,}27$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}89631-$	+119	−507	$\bar{1}{,}89124+$	+123	−515
46	89750−	121	503	89247	125	512
47	89871	123	499	89372+	128	507
48	89994+	126	494	89500	130	504
49	90120+	129	490	89630	132	500
50	$\bar{1}{,}90249-$	+130	−487	$\bar{1}{,}89762+$	+135	−495
51	90379	133	482	89897	137	491
52	90512−	134	478	90034+	140	487
53	90646−	138	472	90174−	141	483
54	90784	139	469	90315+	145	478
55	$\bar{1}{,}90923+$	+142	−463	$\bar{1}{,}90460-$	+146	−474
56	91065	144	459	90606−	148	469
57	91209−	145	455	90754+	151	464
58	91354+	148	449	90905	153	459
59	91502+	150	444	91058	155	454
60	$\bar{1}{,}91652+$	+152	−439	$\bar{1}{,}91213$	+157	−449
61	91804+	155	434	91370+	160	444
62	91959−	156	429	91530−	161	440
63	92115−	158	424	91691	163	434
64	92273−	160	419	91854+	166	428
65	$\bar{1}{,}92433-$	+162	−413	$\bar{1}{,}92020$	+167	−423
66	92595−	163	408	92187+	170	417
67	92758+	166	401	92357	171	412
68	92924	167	396	92528+	174	406
69	93091+	169	389	92702−	175	401
70	$\bar{1}{,}93260+$	+171	−383	$\bar{1}{,}92877-$	+177	−395
71	93431+	173	377	93054−	178	389
72	93604	174	372	93232+	181	382
73	93778+	176	365	93413	182	376
74	93954+	178	359	93595	184	370
75	$\bar{1}{,}94132$	+179	−353	$\bar{1}{,}93779$	+186	−363
76	94311	181	346	93965−	187	357
77	94492−	182	340	94152	189	351
78	94674	183	333	94341−	190	344
79	94857+	185	326	94531	192	337
80	$\bar{1}{,}95042+$	+187	−319	$\bar{1}{,}94723-$	+193	−331
81	95229	187	313	94916	195	324
82	95416+	189	305	95111−	196	317
83	95605+	191	298	95307−	197	310
84	95796−	191	292	95504	199	303
85	$\bar{1}{,}95987$	+193	−284	$\bar{1}{,}95703-$	+199	−296
86	96180−	193	278	95902+	201	288
87	96373+	195	270	96103+	202	281
88	96568	196	263	96305+	203	273
89	96764−	196	256	96508+	205	265
90	$\bar{1}{,}96960+$	+198	−247	$\bar{1}{,}96713-$	+205	−256

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	$e = 0,26$			$e = 0,27$		
v	M	D	D'	M	D	D'
90°	60°,543+	+0°,905	−1°,105	59°,440+	+0°,897	−1°,101
91	61,450	913	113	60,337+	906	109
92	62,363−	921	120	61,243−	914	118
93	63,284−	929	127	62,157	923	125
94	64,213+	938	133	63,080−	931	132
95	65,151+	+0,947	−1,140	64,011+	+0,941	−1,138
96	66,098+	956	146	64,952	950	145
97	67,054+	965	152	65,902	959	151
98	68,019	974	158	66,861	968	157
99	68,993−	983	164	67,829+	978	162
100	69,976−	+0,992	−1,169	68,807+	+0,988	−1,168
101	70,968−	1,001	173	69,795	0,997	173
102	71,969	011	177	70,792	1,007	178
103	72,980	021	181	71,799	017	182
104	74,001	030	185	72,816−	026	186
105	75,031−	+1,039	−1,189	73,842+	+1,037	−1,189
106	76,070+	050	191	74,879+	048	192
107	77,120	060	193	75,927+	057	196
108	78,180−	069	196	76,984	068	198
109	79,249	080	197	78,052−	078	201
110	80,329−	+1,089	−1,199	79,130	+1,089	−1,202
111	81,418+	100	199	80,219−	099	203
112	82,518+	111	200	81,318+	111	204
113	83,629−	120	200	82,429−	121	205
114	84,749+	131	199	83,550−	132	205
115	85,880+	+1,142	−1,198	84,682−	+1,143	−1,204
116	87,022	152	197	85,825−	154	204
117	88,174+	163	195	86,979−	165	202
118	89,337	173	193	88,144−	176	200
119	90,510+	185	190	89,320	187	198
120	91,695−	+1,194	−1,188	90,507+	+1,199	−1,194
121	92,889+	206	183	91,706	210	191
122	94,095	217	179	92,916	221	187
123	95,312−	227	175	94,137+	233	182
124	96,539	238	169	95,370	244	177
125	97,777	+1,249	−1,163	96,614	+1,256	−1,172
126	99,026	260	156	97,870−	266	166
127	100,286	271	150	99,136+	279	158
128	101,557−	281	142	100,415	290	152
129	102,838+	293	133	101,705−	301	144
130	104,131	+1,303	−1,125	103,006	+1,313	−1,135
131	105,434	314	115	104,319−	324	127
132	106,748+	325	105	105,643−	335	117
133	108,073	336	095	106,978	347	106
134	109,409	346	084	108,325−	358	096
135	110,755	+1,357	−1,072	109,683−	+1,369	−1,084

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	$e = 0{,}26$			$e = 0{,}27$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}96960+$	+198	−247	$\bar{1}{,}96713-$	+205	−259
91	97158−	198	240	96918−	206	251
92	97356	199	232	97124	207	243
93	97555+	200	224	97331−	207	236
94	97755	201	217	97538+	209	227
95	$\bar{1}{,}97956-$	+201	−209	$\bar{1}{,}97747$	+209	−220
96	98157	202	201	97956	210	213
97	98359−	202	193	98166−	210	204
98	98561	203	185	98376	211	196
99	98764−	203	177	98587	211	188
100	$\bar{1}{,}98967-$	+203	−169	$\bar{1}{,}98798$	+212	−179
101	99170	204	160	99010−	212	171
102	99374−	204	152	99222−	212	163
103	99578−	204	144	99434	212	154
104	99782−	204	136	99646+	213	146
105	$\bar{1}{,}99986-$	+204	−127	$\bar{1}{,}99859$	+212	−138
106	0,00190−	204	119	0,00071+	213	129
107	00394	204	110	00284	212	120
108	00598−	203	102	00496+	213	111
109	00801+	204	92	00709−	212	104
110	0,01005	+203	− 84	0,00921−	+211	− 95
111	01208	203	76	01132+	212	85
112	01411−	202	67	01344−	211	77
113	01613−	201	58	01555−	210	69
114	01814+	201	49	01765	210	60
115	0,02015+	+201	− 40	0,01975−	+209	− 51
116	02216−	199	32	02184−	208	42
117	02415+	199	23	02392−	207	33
118	02614	198	15	02599	207	24
119	02812−	196	− 6	02806−	205	16
120	0,03008+	+196	+ 3	0,03011	+204	− 7
121	03204	194	11	03215+	204	+ 3
122	03398+	194	21	03419−	201	11
123	03592−	191	28	03620+	201	20
124	03783+	191	38	03821	199	29
125	0,03974	+189	+ 46	0,04020	+198	+ 37
126	04163	187	55	04218−	196	46
127	04350+	186	64	04414−	194	54
128	04536	184	72	04608	192	63
129	04720	182	80	04800+	191	73
130	0,04902+	+181	+ 89	0,04991	+189	+ 81
131	05083−	178	97	05180	187	89
132	05261	176	106	05367−	184	97
133	05437	174	114	05551	182	106
134	05611+	172	122	05733+	180	115
135	0,05783	+170	+130	0,05913+	+178	+123

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	$e = 0,26$			$e = 0,27$		
v	M	D	D'	M	D	D'
135°	110°,755	+1°,357	−1°,072	109°,683−	+1°,369	−1°,084
136	112,112	368	060	111,052	380	072
137	113,480−	378	048	112,432+	392	058
138	114,858−	388	034	113,824	403	046
139	116,246	399	019	115,227−	413	032
140	117,645−	+1,409	−1,005	116,640	+1,424	−1,017
141	119,054−	419	0,990	118,064+	435	1,001
142	120,473−	429	974	119,499+	446	0,985
143	121,902	439	957	120,945	456	969
144	123,341	449	940	122,401+	467	952
145	124,790−	+1,458	−0,922	123,868−	+1,477	−0,934
146	126,248	468	903	125,345−	486	916
147	127,716−	477	885	126,831+	497	896
148	129,193−	486	865	128,328	506	877
149	130,679	495	845	129,834+	516	856
150	132,174+	+1,504	−0,824	131,350+	+1,526	−0,836
151	133,678+	513	802	132,876−	534	815
152	135,191	521	781	134,410	544	792
153	136,712	529	758	135,954−	552	770
154	138,241	537	735	137,506−	560	747
155	139,778	+1,545	−0,712	139,066+	+1,569	−0,723
156	141,323	552	688	140,635+	577	699
157	142,875+	560	663	142,212	585	674
158	144,435	566	638	143,797−	592	649
159	146,001+	574	612	145,389	599	623
160	147,575−	+1,580	−0,587	146,988	+1,606	−0,597
161	149,155−	586	561	148,594+	613	570
162	150,741−	592	534	150,207+	619	542
163	152,333−	597	507	151,826+	626	515
164	153,930	603	478	153,452−	631	487
165	155,533	+1,608	−0,450	155,083−	+1,636	−0,459
166	157,141	613	422	156,719	641	430
167	158,754−	617	394	158,360+	646	400
168	160,371−	621	365	160,006+	651	371
169	161,992	625	335	161,657	654	341
170	163,617	+1,628	−0,306	163,311+	+1,659	−0,311
171	165,245+	632	275	164,970−	661	281
172	166,877−	634	246	166,631	665	250
173	168,511	637	215	168,296−	667	220
174	170,148−	639	185	169,963	669	188
175	171,787−	+1,640	−0,155	171,632+	+1,672	−0,157
176	173,427	642	123	173,304−	672	126
177	175,069	643	093	174,976+	674	094
178	176,712	644	062	176,650+	675	063
179	178,356	644	031	178,325	675	032
180	180,000	+1,644	−0,000	180,000	+1,675	−0,000

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	$e = 0{,}26$			$e = 0{,}27$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,05783	+170	+130	0,05913+	+178	+123
136	05953−	167	138	06091	175	131
137	06120	165	146	06266+	173	139
138	06285−	162	154	06439	170	147
139	06447−	159	162	06609	167	155
140	0,06606+	+157	+170	0,06776	+165	+163
141	06763	154	178	06941−	161	170
142	06917	151	185	07102	159	179
143	07068+	148	193	07261−	155	186
144	07216+	146	200	07416	152	194
145	0,07362−	+142	+206	0,07568+	+150	+201
146	07504−	139	214	07718−	145	208
147	07643−	135	220	07863+	143	215
148	07778+	133	228	08006−	139	222
149	07911−	128	234	08145−	135	228
150	0,08039+	+126	+241	0,08280	+132	+235
151	08165	122	247	08412−	128	241
152	08287−	118	253	08540−	124	248
153	08405	115	259	08664	120	254
154	08520−	110	264	08784+	117	260
155	0,08630+	+108	+271	0,08901	+112	+266
156	08738−	103	275	09013+	109	273
157	08841−	99	281	09122	104	277
158	08940	95	286	09226+	100	282
159	09035+	91	291	09326+	96	287
160	0,09126+	+ 88	+296	0,09422+	+ 92	+292
161	09214−	83	300	09514	87	296
162	09297−	78	304	09601+	83	301
163	09375+	75	309	09684	79	305
164	09450	70	313	09763−	73	309
165	0,09520+	+ 66	+316	0,09836+	+ 70	+313
166	09586	62	320	09906	65	316
167	09648−	57	323	09971−	60	319
168	09705	53	326	10031−	55	323
169	09758−	48	328	10086+	51	326
170	0,09806	+ 44	+331	0,10137	+ 46	+328
171	09850−	39	333	10183	41	331
172	09889	34	335	10224+	37	333
173	09923+	31	338	10261	31	334
174	09954−	25	338	10292+	27	337
175	0,09979	+ 21	+340	0,10319+	+ 22	+338
176	10000	16	341	10341+	17	339
177	10016	12	342	10358+	13	340
178	10028−	7	343	10371−	7	340
179	10035−	+ 2	343	10378	+ 2	340
180	0,10037	− 2	+343	0,10380+	− 2	+341

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	$e = 0,28$			$e = 0,29$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+0,540	−0,000	0,000	+0,527	−0,000
1	0,540	540	013	0,527−	527	013
2	1,080	540	026	1,054−	527	027
3	1,620+	541	039	1,581−	527	040
4	2,161−	541	053	2,108−	527	053
5	2,702−	+0,541	−0,067	2,635	+0,528	−0,065
6	3,243−	541	080	3,163	528	078
7	3,784	542	093	3,691+	529	091
8	4,326	543	106	4,220	529	105
9	4,869−	543	120	4,749+	530	117
10	5,412	+0,544	−0,133	5,279+	+0,531	−0,130
11	5,956	545	146	5,810	532	144
12	6,501−	545	159	6,342	532	157
13	7,046+	547	172	6,874	533	170
14	7,593	548	186	7,407+	535	183
15	8,141−	+0,548	−0,199	7,942−	+0,535	−0,196
16	8,689+	550	212	8,477+	537	209
17	9,239	551	225	9,014	538	222
18	9,790+	553	238	9,552−	539	236
19	10,343−	554	252	10,091	541	248
20	10,897−	+0,555	−0,265	10,632−	+0,542	−0,262
21	11,452−	557	278	11,174−	543	275
22	12,009−	558	292	11,717	545	287
23	12,567	560	305	12,262+	547	300
24	13,127+	562	318	12,809+	549	313
25	13,689	+0,564	−0,331	13,358	+0,551	−0,326
26	14,253	566	344	13,909−	552	340
27	14,819−	567	358	14,461	555	352
28	15,386+	570	370	15,016−	556	366
29	15,956	572	384	15,572+	559	378
30	16,528	+0,574	−0,397	16,131+	+0,561	−0,391
31	17,102+	577	410	16,692	564	404
32	17,679	579	423	17,256	566	418
33	18,258	581	436	17,822−	568	431
34	18,839+	585	449	18,390	571	443
35	19,424−	+0,586	−0,463	18,961	+0,574	−0,456
36	20,010+	590	475	19,535−	576	470
37	20,600−	592	489	20,111+	580	482
38	21,192	595	501	20,691−	582	496
39	21,787+	599	514	21,273−	585	508
40	22,386−	+0,601	−0,528	21,858	+0,589	−0,521
41	22,987	605	540	22,447−	591	535
42	23,592−	608	554	23,038	595	547
43	24,200−	611	567	23,633	598	560
44	24,811−	614	580	24,231+	602	572
45	25,425+	+0,619	−0,592	24,833+	+0,606	−0,585

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	$e = 0{,}28$			$e = 0{,}29$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
0°	$\bar{1}{,}85733+$	+ 2	−607	$\bar{1}{,}85126$	+ 1	−616
1	85735−	4	608	85127+	5	616
2	85739	7	607	85132−	7	616
3	85746+	10	607	85139+	11	615
4	85756+	13	606	85150−	13	616
5	$\bar{1}{,}85769+$	+ 16	−606	$\bar{1}{,}85163$	+ 16	−615
6	85785+	19	606	85179+	20	614
7	85804	22	605	85199−	22	614
8	85826	24	605	85221	25	614
9	85850+	28	604	85246+	28	613
10	$\bar{1}{,}85878$	+ 30	−604	$\bar{1}{,}85274+$	+ 32	−612
11	85908	33	602	85306−	34	612
12	85941+	36	601	85340−	37	611
13	85977+	39	600	85377−	40	610
14	86016+	42	599	85417	43	608
15	$\bar{1}{,}86058$	+ 45	−598	$\bar{1}{,}85460-$	+ 46	−607
16	86103	47	597	85506−	49	606
17	86150+	51	595	85555−	51	605
18	86201−	53	595	85606+	55	603
19	86254	56	593	85661	58	602
20	$\bar{1}{,}86310$	+ 59	−591	$\bar{1}{,}85719-$	+ 60	−601
21	86369	62	590	85779	64	598
22	86431−	64	588	85843−	66	597
23	86495	68	586	85909	69	595
24	86563−	70	585	85978+	72	593
25	$\bar{1}{,}86633-$	+ 73	−583	$\bar{1}{,}86050+$	+ 75	−591
26	86706−	75	581	86125+	78	589
27	86781+	79	578	86203+	81	587
28	86860	81	576	86284	84	585
29	86941	84	573	86368−	86	583
30	$\bar{1}{,}87025$	+ 87	−571	$\bar{1}{,}86454$	+ 89	−580
31	87112	89	569	86543+	92	578
32	87201+	93	566	86635+	95	575
33	87294−	95	564	86730	98	572
34	87389−	97	561	86828	100	570
35	$\bar{1}{,}87486+$	+101	−558	$\bar{1}{,}86928+$	+104	−567
36	87587−	103	555	87032−	106	565
37	87690−	105	552	87138−	108	562
38	87795+	109	549	87246+	112	558
39	87904−	111	546	87358	114	555
40	$\bar{1}{,}88015$	+113	−543	$\bar{1}{,}87472+$	+117	−552
41	88128+	117	539	87589+	120	549
42	88245−	119	536	87709	122	545
43	88364−	121	533	87831+	125	542
44	88485	124	529	87956+	128	538
45	$\bar{1}{,}88609$	+126	−525	$\bar{1}{,}88084$	+130	−535

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	$e = 0{,}28$			$e = 0{,}29$		
v	M	D	D'	M	D	D'
45°	25°,425+	+0°,619	−0°,592	24°,833+	+0°,606	−0°,585
46	26,044−	622	605	25,439−	609	598
47	26,666−	625	618	26,048−	613	611
48	27,291+	630	630	26,661−	616	624
49	27,921−	633	644	27,277+	621	636
50	28,554	+0,638	−0,656	27,898	+0,625	−0,649
51	29,192−	641	669	28,523	629	662
52	29,833+	646	681	29,152	633	674
53	30,479	650	694	29,785	638	687
54	31,129	655	706	30,423−	642	699
55	31,784−	+0,659	−0,719	31,065−	+0,646	−0,712
56	32,443	664	732	31,711+	652	724
57	33,107−	668	744	32,363−	656	737
58	33,775	673	756	33,019	661	749
59	34,448+	679	768	33,680	666	761
60	35,127−	+0,683	−0,781	34,346	+0,671	−0,773
61	35,810	688	793	35,017	677	785
62	36,498+	694	804	35,694−	681	798
63	37,192+	699	817	36,375+	688	809
64	37,891+	705	828	37,063−	692	822
65	38,596	+0,710	−0,841	37,755+	+0,699	−0,833
66	39,306+	716	852	38,454−	704	845
67	40,022	722	864	39,158	710	857
68	40,744	728	876	39,868	716	869
69	41,472−	733	888	40,584+	723	880
70	42,205+	+0,740	−0,898	41,307−	+0,728	−0,892
71	42,945+	747	910	42,035+	735	903
72	43,692−	752	922	42,770+	742	914
73	44,444+	760	932	43,512	748	926
74	45,204−	765	944	44,260+	755	937
75	45,969+	+0,773	−0,954	45,015+	+0,762	−0,948
76	46,742	779	965	45,777	769	959
77	47,521+	787	975	46,546	776	969
78	48,308	794	986	47,322	783	980
79	49,102−	801	0,997	48,105+	791	0,990
80	49,903−	+0,808	−1,007	48,896	+0,798	−1,001
81	50,711	816	017	49,694+	806	010
82	51,527−	823	027	50,500+	814	021
83	52,350	831	036	51,314+	822	031
84	53,181+	839	045	52,136	830	041
85	54,020+	+0,848	−1,054	52,966−	+0,838	−1,050
86	54,868−	855	064	53,804−	846	060
87	55,723	863	073	54,650	855	069
88	56,586+	872	081	55,505−	863	078
89	57,458+	881	090	56,368	872	086
90	58,339−	+0,889	−1,099	57,240+	+0,881	−1,095

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	$e = 0{,}28$			$e = 0{,}29$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}88609$	+126	−525	$\bar{1}{,}88084$	+130	−535
46	88735+	130	521	88214+	133	531
47	88865−	131	518	88347	136	527
48	88996	134	513	88483−	138	524
49	89130+	137	509	88621−	140	520
50	$\bar{1}{,}89267$−	+139	−506	$\bar{1}{,}88761$+	+144	−515
51	89406−	141	501	88905−	145	512
52	89547+	144	497	89050+	149	507
53	89691	146	492	89199−	150	503
54	89837+	149	488	89349+	153	498
55	$\bar{1}{,}89986$	+151	−484	$\bar{1}{,}89502$+	+156	−493
56	90137	153	479	89658	158	489
57	90290+	156	474	89816	160	484
58	90446−	158	470	89976+	163	479
59	90604+	160	465	90139	165	475
60	$\bar{1}{,}90764$−	+162	−460	$\bar{1}{,}90304$+	+168	−470
61	90926	164	454	90472−	169	465
62	91090+	167	449	90641+	172	459
63	91257+	169	444	90813+	174	454
64	91426	171	439	90987+	177	449
65	$\bar{1}{,}91597$	+173	−433	$\bar{1}{,}91164$	+178	−444
66	91770	175	428	91342+	181	438
67	91945+	177	422	91523	183	433
68	92122+	179	416	91706	185	427
69	92301+	181	410	91891−	187	422
70	$\bar{1}{,}92482$+	+183	−404	$\bar{1}{,}92078$−	+189	−416
71	92665+	185	398	92267−	190	410
72	92850+	187	393	92457+	193	403
73	93037	188	387	92650+	195	397
74	93225+	191	380	92845	197	391
75	$\bar{1}{,}93416$−	+192	−374	$\bar{1}{,}93042$−	+198	−385
76	93608−	193	368	93240	200	379
77	93801+	196	361	93440+	202	372
78	93997	197	355	93642	204	366
79	94194	198	348	93846−	205	359
80	$\bar{1}{,}94392$+	+200	−341	$\bar{1}{,}94051$	+207	−352
81	94592+	202	334	94258	208	346
82	94794	203	328	94466+	210	338
83	94997	204	321	94676+	212	331
84	95201+	206	313	94888	213	325
85	$\bar{1}{,}95407$	+207	−306	$\bar{1}{,}95101$−	+214	−318
86	95614	208	299	95315	216	310
87	95822+	210	291	95531−	216	303
88	96032	211	285	95747+	219	295
89	96243−	211	277	95966−	219	289
90	$\bar{1}{,}96454$+	+213	−269	$\bar{1}{,}96185$	+220	−281

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	$e = 0,28$			$e = 0,29$		
v	M	D	D'	M	D	D'
90°	58°,339 −	+0°,889	−1°,099	57°,240 +	+0°,881	−1°,095
91	59,228 −	897	107	58,121 +	890	103
92	60,125 −	907	114	59,011 +	900	111
93	61,032 +	916	121	59,911 +	908	120
94	61,948	925	129	60,819	918	127
95	62,873	+0,934	−1,136	61,737 −	+0,927	−1,135
96	63,807	944	143	62,664	937	141
97	64,751	953	150	63,601	947	148
98	65,704	963	156	64,548	957	155
99	66,667	972	162	65,505	967	161
100	67,639 +	+0,983	−1,167	66,472 −	+0,977	−1,167
101	68,622	0,992	173	67,449	987	173
102	69,614 +	1,003	178	68,436 +	0,998	178
103	70,617	013	183	69,434	1,009	183
104	71,630 −	023	187	70,443 −	019	188
105	72,653	+1,034	−1,191	71,462 −	+1,030	−1,193
106	73,687 −	044	195	72,492 −	041	197
107	74,731 −	055	198	73,533 −	052	200
108	75,786 −	065	201	74,585 −	063	203
109	76,851 +	077	203	75,648	074	206
110	77,928	+1,088	−1,206	76,722 +	+1,086	−1,208
111	79,016 −	098	208	77,808 +	098	210
112	80,114	110	208	78,906	109	212
113	81,224	121	209	80,015	121	213
114	82,345	133	209	81,136 −	132	214
115	83,478 −	+1,143	−1,210	82,268 +	+1,145	−1,214
116	84,621 +	156	208	83,413 −	156	214
117	85,777	167	208	84,569	169	213
118	86,944	178	206	85,738 −	180	213
119	88,122 +	191	204	86,918 +	193	210
120	89,313	+1,202	−1,202	88,111 +	+1,206	−1,208
121	90,515	214	198	89,317 −	217	206
122	91,729	226	195	90,534	230	202
123	92,955 −	238	191	91,764	243	199
124	94,193 −	249	186	93,007 −	254	195
125	95,442	+1,262	−1,181	94,261 −	+1,268	−1,189
126	96,704	274	175	95,529	280	184
127	97,978 −	285	169	96,809	293	178
128	99,263	298	161	98,102 −	305	172
129	100,561	310	154	99,407	318	164
130	101,871 −	+1,321	−1,146	100,725	+1,330	−1,156
131	103,192 +	334	137	102,055 +	344	147
132	104,526	346	127	103,399 −	355	139
133	105,872 −	357	118	104,754 +	369	128
134	107,229 +	370	106	106,123 −	380	119
135	108,599	+1,381	−1,096	107,503 +	+1,394	−1,107

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	$e = 0{,}28$			$e = 0{,}29$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}96454+$	+213	−269	$\bar{1}{,}96185$	+220	−281
91	96667	214	262	96405	222	273
92	96881−	214	254	96627−	222	266
93	97095+	216	246	96849	223	258
94	97311	216	239	97072+	225	249
95	$\bar{1}{,}97527+$	+216	−230	$\bar{1}{,}97297-$	+225	−242
96	97743+	219	221	97522−	225	234
97	97962	218	215	97747+	227	225
98	98180+	219	206	97974	227	218
99	98399+	220	198	98201	228	209
100	$\bar{1}{,}98619$	+220	−190	$\bar{1}{,}98429$	+228	−201
101	98839	220	182	98657	229	193
102	99059	221	173	98886−	229	185
103	99280−	220	165	99115−	229	176
104	99500+	221	156	99344	229	168
105	$\bar{1}{,}99721+$	+221	−148	$\bar{1}{,}99573+$	+230	−159
106	$\bar{1}{,}99942+$	222	139	$\bar{1}{,}99803$	230	150
107	0,00164−	221	131	0,00033−	229	142
108	00385−	220	123	00262+	230	133
109	00605+	221	113	00492	229	124
110	0,00826	+221	−105	0,00721+	+229	−115
111	01047−	220	97	00950+	229	106
112	01267−	219	88	01179+	229	97
113	01486+	219	78	01408−	228	89
114	01705+	219	69	01636−	227	80
115	0,01924−	+218	− 61	0,01863	+227	− 71
116	02142−	217	52	02090−	226	62
117	02359−	216	43	02316−	225	53
118	02575	215	34	02541	224	44
119	02790	214	25	02765	223	35
120	0,03004+	+214	− 16	0,02988	+222	− 26
121	03218−	212	− 8	03210+	221	17
122	03430−	210	+ 1	03431	220	− 8
123	03640+	210	11	03651−	218	+ 1
124	03850−	207	19	03869	217	10
125	0,04057+	+207	+ 29	0,04086−	+215	+ 19
126	04264−	204	37	04301	214	28
127	04468+	203	47	04515−	211	37
128	04671+	202	55	04726+	210	46
129	04873−	199	63	04936+	208	55
130	0,05072	+197	+ 72	0,05144	+206	+ 64
131	05269	195	81	05350	204	73
132	05464+	193	90	05554	201	81
133	05657+	191	98	05755+	200	91
134	05848	188	107	05955−	196	98
135	0,06036+	+186	+115	0,06151+	+195	+108

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	$e = 0,28$			$e = 0,29$		
v	M	D	D'	M	D	D'
135°	108°,599	+1°,381	−1°,096	107°,503+	+1°,394	−1°,107
136	109,980+	394	083	108,897	406	096
137	111,374−	404	071	110,303−	418	084
138	112,778+	417	057	111,721−	430	070
139	114,195	428	044	113,151	443	056
140	115,623	+1,440	−1,029	114,594−	+1,455	−1,042
141	117,063−	451	1,014	116,049−	466	027
142	118,514−	462	0,999	117,515+	479	1,011
143	119,976	473	982	118,994	490	0,995
144	121,449	485	965	120,484+	502	977
145	122,934−	+1,495	−0,948	121,986+	+1,514	−0,960
146	124,429−	506	929	123,500	525	942
147	125,935−	516	910	125,025	536	923
148	127,451	527	890	126,561	547	903
149	128,978−	536	870	128,108	558	883
150	130,514+	+1,547	−0,848	129,666−	+1,568	−0,862
151	132,061	557	827	131,234	579	840
152	133,618−	566	805	132,813−	588	818
153	135,184−	575	783	134,401+	599	794
154	136,759	584	759	136,000	608	771
155	138,343+	+1,593	−0,735	137,608+	+1,618	−0,746
156	139,936+	602	710	139,226	627	722
157	141,538	610	685	140,853−	635	697
158	143,148	618	660	142,488+	644	671
159	144,766	625	634	144,132+	653	644
160	146,391+	+1,633	−0,606	145,785−	+1,660	−0,618
161	148,024+	641	579	147,445−	667	590
162	149,665−	646	553	149,112+	675	562
163	151,311+	654	524	150,787	682	533
164	152,965−	659	496	152,469	688	505
165	154,624	+1,665	−0,467	154,157+	+1,695	−0,475
166	156,289	671	437	155,852−	700	446
167	157,960−	675	408	157,552	705	416
168	159,635+	681	378	159,257+	711	384
169	161,316−	684	348	160,968	715	354
170	163,000+	+1,689	−0,317	162,683+	+1,720	−0,322
171	164,689	692	286	164,403	723	292
172	166,381	695	255	166,126	727	260
173	168,076+	699	223	167,853	730	228
174	169,775−	700	192	169,583−	732	196
175	171,475	+1,703	−0,160	171,315	+1,734	−0,163
176	173,178−	704	129	173,049+	736	130
177	174,882	705	097	174,785+	738	098
178	176,587+	706	064	176,523	738	066
179	178,293+	707	032	178,261	739	033
180	180,000	+1,707	−0,000	180,000	+1,739	−0,000

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	$e = 0{,}28$			$e = 0{,}29$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,06036+	+186	+115	0,06151+	+195	+108
136	06222	183	124	06346−	191	116
137	06405+	181	132	06537+	189	125
138	06586	178	140	06726	186	133
139	06764	175	148	06912+	183	141
140	0,06939+	+172	+156	0,07095+	+181	+150
141	07111+	170	165	07276−	177	157
142	07281−	166	172	07453−	173	165
143	07447−	163	179	07626+	171	173
144	07610−	159	187	07797	167	181
145	0,07769+	+157	+195	0,07964	+164	+188
146	07926−	152	202	08128−	160	195
147	08078+	150	210	08288−	156	203
148	08228−	145	216	08444	152	210
149	08373+	142	223	08596+	149	218
150	0,08515+	+138	+230	0,08745	+145	+225
151	08653+	135	237	08890	141	231
152	08788−	130	243	09031−	136	238
153	08918	126	249	09167+	133	245
154	09044+	123	256	09300	128	250
155	0,09167−	+119	+261	0,09428	+124	+257
156	09286	113	266	09552	119	262
157	09399−	109	272	09671+	115	268
158	09508+	105	278	09786	110	274
159	09613+	101	283	09896+	106	279
160	0,09714+	+ 96	+288	0,10002	+101	+284
161	09810+	92	293	10103	96	289
162	09902	87	297	10199+	92	294
163	09989+	83	302	10291−	86	298
164	10072−	77	305	10377	82	302
165	0,10149+	+ 73	+310	0,10459−	+ 76	+306
166	10222+	68	313	10535+	72	310
167	10290+	64	317	10607−	66	313
168	10354−	58	319	10673	61	317
169	10412	53	322	10734+	56	320
170	0,10465	+ 49	+325	0,10790+	+ 51	+323
171	10514−	43	327	10841	46	325
172	10557	38	330	10887−	40	327
173	10595+	34	332	10927	35	329
174	10629−	28	333	10962	30	331
175	0,10657−	+ 23	+335	0,10992−	+ 24	+332
176	10680	18	336	11016−	19	333
177	10698	13	337	11035−	13	334
178	10711−	7	337	11048	8	335
179	10718+	+ 3	338	11056+	+ 3	336
180	0,10721	− 3	+338	0,11059	− 3	+335

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	$e = 0{,}30$			$e = 0{,}31$		
v	M	D	D'	M	D	D'
0°	0°,000	+0°,514	−0°,000	0°,000	+0°,501	−0°,000
1	0,514−	513	013	0,501−	501	013
2	1,027+	514	025	1,002−	501	026
3	1,541+	514	038	1,503−	501	038
4	2,055+	515	051	2,004	501	051
5	2,570	+0,515	−0,065	2,505+	+0,502	−0,063
6	3,085−	515	078	3,007+	503	076
7	3,600−	515	090	3,510−	502	089
8	4,115+	517	103	4,012+	504	101
9	4,632−	517	116	4,516−	504	115
10	5,149−	+0,517	−0,129	5,020−	+0,505	−0,127
11	5,666+	519	141	5,525−	505	140
12	6,185−	519	155	6,030	507	152
13	6,704	520	167	6,537−	507	166
14	7,224+	522	180	7,044	508	178
15	7,746−	+0,522	−0,194	7,552+	+0,510	−0,190
16	8,268	524	206	8,062	510	204
17	8,792−	524	220	8,572+	512	216
18	9,316+	527	232	9,084+	514	228
19	9,843−	527	245	9,598−	514	242
20	10,370	+0,529	−0,258	10,112+	+0,516	−0,254
21	10,899	531	271	10,628+	518	267
22	11,430−	532	284	11,146	519	280
23	11,962	534	297	11,665+	521	292
24	12,496	536	310	12,186+	523	305
25	13,032−	+0,537	−0,323	12,709+	+0,525	−0,318
26	13,569	540	335	13,234	527	331
27	14,109−	541	348	13,761−	528	344
28	14,650	544	361	14,289+	531	356
29	15,194−	546	374	14,820	533	369
30	15,740−	+0,548	−0,387	15,353	+0,535	−0,381
31	16,288−	550	400	15,888+	538	394
32	16,838	553	412	16,426	540	407
33	17,391	556	425	16,966	543	420
34	17,947−	558	438	17,509−	545	433
35	18,505−	+0,560	−0,451	18,054−	+0,548	−0,445
36	19,065+	564	463	18,602−	550	458
37	19,629	566	477	19,152+	554	470
38	20,195	570	489	19,706	557	483
39	20,765−	572	502	20,263−	559	496
40	21,337	+0,575	−0,515	20,822	+0,563	−0,508
41	21,912+	579	527	21,385	566	521
42	22,491+	582	540	21,951	569	534
43	23,073+	586	553	22,520+	573	546
44	23,659	589	566	23,093	576	559
45	24,248	+0,593	−0,579	23,669+	+0,580	−0,571

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	e = 0,30			e = 0,31		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
0°	$\bar{1}$,84510	+ 1	−625	$\bar{1}$,83885	+ 1	−634
1	84511+	5	625	83886+	5	634
2	84516	8	625	83891	8	634
3	84524−	10	625	83899	11	634
4	84534+	14	624	83910	14	633
5	$\bar{1}$,84548	+ 17	−624	$\bar{1}$,83924	+ 17	−633
6	84565−	20	624	83941+	21	632
7	84585−	22	623	83962−	23	633
8	84607+	26	622	83985	27	632
9	84633+	29	621	84012−	29	631
10	$\bar{1}$,84662+	+ 32	−621	$\bar{1}$,84041+	+ 33	−630
11	84694+	35	620	84074	36	629
12	84729+	38	619	84110	39	628
13	84767+	42	618	84149	42	627
14	84809−	44	618	84191+	46	626
15	$\bar{1}$,84853−	+ 47	−616	$\bar{1}$,84237−	+ 48	−626
16	84900−	50	615	84285	51	624
17	84950	53	614	84336+	55	623
18	85003	56	612	84391	57	622
19	85059+	59	611	84448+	61	620
20	$\bar{1}$,85118+	+ 63	−609	$\bar{1}$,84509	+ 64	−618
21	85181−	65	608	84573	67	617
22	85246−	68	606	84640−	70	616
23	85314	71	604	84710−	73	614
24	85385	74	602	84783−	76	612
25	$\bar{1}$,85459	+ 77	−600	$\bar{1}$,84859−	+ 79	−610
26	85536	80	598	84938−	82	608
27	85616	83	596	85020−	85	606
28	85699	86	594	85105	88	604
29	85785	89	592	85193	91	602
30	$\bar{1}$,85874−	+ 91	−590	$\bar{1}$,85284	+ 94	−599
31	85965+	95	587	85378+	97	597
32	86060	98	585	85475+	100	594
33	86158−	100	583	85575+	103	591
34	86258	103	580	85678+	106	589
35	$\bar{1}$,86361+	+106	−577	$\bar{1}$,85784+	+109	−586
36	86467+	109	574	85893+	112	583
37	86576+	112	571	86005+	115	581
38	86688	115	568	86120	118	578
39	86803−	117	565	86238+	120	575
40	$\bar{1}$,86920+	+120	−562	$\bar{1}$,86358+	+124	−571
41	87040+	124	558	86482	126	569
42	87164−	125	556	86608+	130	565
43	87289+	129	551	86738−	132	562
44	87418	131	548	86870−	134	559
45	$\bar{1}$,87549	+134	−545	$\bar{1}$,87004+	+138	−554

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	$e = 0{,}30$			$e = 0{,}31$		
v	M	D	D'	M	D	D'
45°	24°,248	+0°,593	−0°,579	23°,669+	+0°,580	−0°,571
46	24,841−	596	592	24,249+	584	584
47	25,437	600	604	24,833	588	597
48	26,037	604	616	25,421−	591	610
49	26,641	608	629	26,012	596	622
50	27,249+	+0,612	−0,641	26,608−	+0,599	−0,635
51	27,861+	617	654	27,207	604	647
52	28,478−	620	667	27,811	608	660
53	29,098+	626	679	28,419	613	672
54	29.724−	629	692	29,032−	617	685
55	30,353	+0,634	−0,704	29,649	+0,622	−0,697
56	30,987+	639	716	30,271−	626	709
57	31,626+	644	729	30,897+	632	721
58	32,270+	649	741	31,529	636	734
59	32,919	654	754	32,165+	642	746
60	33,573−	+0,659	−0,766	32,807	+0,647	−0,758
61	34,232−	664	778	33,454	652	771
62	34,896	670	790	34,106	658	783
63	35,566−	675	802	34,764−	663	795
64	36,241	681	814	35,427	669	807
65	36,922	+0,687	−0,826	36,096−	+0,674	−0,819
66	37,609−	692	839	36,770+	681	830
67	38,301	698	850	37,451	687	842
68	38,999+	705	861	38,138	693	854
69	39,704	711	873	38,831	699	866
70	40,415	+0,717	−0,885	39,530+	+0,706	−0,878
71	41,132+	724	896	40,236	712	889
72	41,856	730	908	40,948+	719	900
73	42,586+	737	919	41,667+	726	912
74	43,323+	744	930	42,393+	733	923
75	44,067+	+0,751	−0,941	43,126+	+0,740	−0,935
76	44,818+	759	952	43,866+	748	946
77	45,577−	765	963	44,614−	754	957
78	46,342	773	974	45,368+	763	967
79	47,115	780	984	46,131−	769	979
80	47,895+	+0,789	−0,995	46,900+	+0,778	−0,989
81	48,684−	795	1,006	47,678	786	1,000
82	49,479+	804	015	48,464	794	010
83	50,283+	812	025	49,258−	802	021
84	51,095+	821	035	50,060	810	031
85	51,916−	+0,828	−1,046	50,870+	+0,819	−1,040
86	52,744+	837	055	51,689+	828	050
87	53,581+	846	064	52,517	837	060
88	54,427+	855	073	53,354−	845	070
89	55,282	863	083	54,199+	855	078
90	56,145+	+0,873	−1,091	55,054	+0,864	−1,087

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	$e = 0{,}30$			$e = 0{,}31$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}87549$	+134	−545	$\bar{1}{,}87004+$	+138	−554
46	87683	137	541	87142	141	551
47	87820	139	537	87283−	143	548
48	87959+	142	533	87426	146	544
49	88101+	145	529	87572	149	540
50	$\bar{1}{,}88246$	+147	−525	$\bar{1}{,}87721-$	+151	−536
51	88393+	150	521	87872	154	532
52	88543+	153	517	88026	157	528
53	88696	155	513	88183	159	524
54	88851	158	509	88342+	163	519
55	$\bar{1}{,}89009-$	+160	−504	$\bar{1}{,}88505-$	+165	−515
56	89169	163	499	88670+	167	511
57	89332−	165	495	88837−	169	506
58	89497−	167	491	89006+	173	501
59	89664+	170	485	89179	175	496
60	$\bar{1}{,}89834+$	+173	−480	$\bar{1}{,}89354$	+177	−492
61	90007−	175	476	89531+	180	486
62	90182−	177	471	89711	182	481
63	90359−	179	466	89893+	185	476
64	90538+	182	460	90078+	187	471
65	$\bar{1}{,}90720$	+184	−455	$\bar{1}{,}90265+$	+190	−465
66	90904	186	449	90455	192	461
67	91090+	189	443	90647−	194	455
68	91279−	190	438	90841−	196	450
69	91469+	193	432	91037	198	444
70	$\bar{1}{,}91662$	+195	−427	$\bar{1}{,}91235+$	+201	−437
71	91857	197	421	91436+	203	432
72	92054	199	415	91639	205	426
73	92253−	201	409	91844	207	420
74	92454−	203	403	92051	209	414
75	$\bar{1}{,}92657-$	+204	−397	$\bar{1}{,}92260+$	+211	−407
76	92861+	207	390	92471+	213	401
77	93068	208	384	92684+	215	395
78	93276+	211	377	92899+	217	388
79	93487−	212	371	93116+	219	382
80	$\bar{1}{,}93699-$	+213	−364	$\bar{1}{,}93335$	+220	−375
81	93912+	216	357	93555+	223	368
82	94128−	217	350	93778−	224	362
83	94345−	218	343	94002−	225	355
84	94563	220	336	94227	227	348
85	$\bar{1}{,}94783$	+222	−329	$\bar{1}{,}94454+$	+229	−340
86	95005−	223	322	94683	230	333
87	95228−	224	315	94913	232	326
88	95452	225	307	95145−	233	319
89	95677+	227	299	95378−	234	312
90	$\bar{1}{,}95904$	+228	−292	$\bar{1}{,}95612$	+236	−304

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	e = 0,30			e = 0,31		
v	M	D	D'	M	D	D'
90°	56°,145+	+0°,873	−1°,091	55°,054	+0°,864	−1°,087
91	57,018	882	100	55,918	874	096
92	57,900	891	108	56,792−	883	105
93	58,791	901	116	57,675−	893	114
94	59,692	910	124	58,568−	902	122
95	60,602+	+0,921	−1,132	59,470+	+0,913	−1,129
96	61,523−	930	140	60,383	923	137
97	62,453	940	147	61,306	934	145
98	63,393	951	153	62,240−	943	153
99	64,344−	961	161	63,183+	955	159
100	65,305−	+0,971	−1,167	64,138	+0,965	−1,166
101	66,276	982	173	65,103+	977	172
102	67,258	0,993	178	66,080−	987	179
103	68,251	1,004	184	67,067	0,999	184
104	69,255−	014	189	68,066	1,010	190
105	70,269+	+1,026	−1,193	69,076	+1,022	−1,195
106	71,295+	038	197	70,098−	033	200
107	72,333−	049	202	71,131	045	204
108	73,382−	060	206	72,176	057	208
109	74,442	072	209	73,233	069	211
110	75,514	+1,084	−1,212	74,302+	+1,082	−1,214
111	76,598−	096	214	75,384	094	218
112	77,694−	108	216	76,478−	106	220
113	78,802−	120	218	77,584	119	222
114	79,922−	132	219	78,703−	131	224
115	81,054	+1,145	−1,220	79,834+	+1,145	−1,224
116	82,199−	157	220	80,979	157	225
117	83,356−	169	220	82,136+	171	225
118	84,525+	183	218	83,307−	183	225
119	85,708−	195	218	84,490+	197	223
120	86,903	+1,208	−1,216	85,687+	+1,210	−1,222
121	88,111−	221	214	86,897−	224	220
122	89,332−	233	211	88,121+	237	218
123	90,565+	247	207	89,358+	251	215
124	91,812	260	203	90,609	265	211
125	93,072	+1,273	−1,198	91,874−	+1,278	−1,208
126	94,345	286	193	93,152−	291	203
127	95,631	299	188	94,443−	306	197
128	96,930+	313	181	95,749+	320	191
129	98,243	326	174	97,069−	333	185
130	99,569	+1,339	−1,167	98,402	+1,347	−1,177
131	100,908	352	159	99,749+	361	169
132	102,260	366	150	101,110−	375	160
133	103,626−	378	141	102,485−	389	151
134	105,004+	392	130	103,874+	403	141
135	106,396+	+1,405	−1,119	105,277	+1,417	−1,131

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	$e = 0{,}30$			$e = 0{,}31$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}95904$	+228	−292	$\bar{1}{,}95612$	+236	−304
91	96132	229	284	95848−	236	296
92	96361+	230	277	96084+	238	288
93	96591+	232	269	96322+	239	280
94	96823−	232	262	96561+	241	272
95	$\bar{1}{,}97055$−	+233	−253	$\bar{1}{,}96802$−	+241	−265
96	97288	234	245	97043−	242	257
97	97522−	234	237	97285−	242	249
98	97756+	236	229	97527+	244	240
99	97992−	236	221	97771	244	232
100	$\bar{1}{,}98228$−	+236	−213	$\bar{1}{,}98015$	+245	−224
101	98464	237	204	98260	245	216
102	98701	238	196	98505+	246	207
103	98939−	237	188	98751+	247	198
104	99176+	238	178	98998−	246	190
105	$\bar{1}{,}99414$+	+239	−170	$\bar{1}{,}99244$+	+247	−181
106	99653−	238	162	99491	247	172
107	$\bar{1}{,}99891$	238	153	99738+	247	164
108	0,00129+	239	144	$\bar{1}{,}99985$+	248	155
109	00368−	238	135	0,00233−	247	147
110	0,00606	+238	−126	0,00480−	+246	−138
111	00844	238	118	00726+	247	128
112	01082−	237	109	00973	246	119
113	01319	237	100	01219+	246	110
114	01556−	236	91	01465+	246	101
115	0,01792	+236	− 81	0,01711−	+244	− 92
116	02028−	235	73	01955+	244	83
117	02263−	234	64	02199+	244	73
118	02497	233	54	02443−	242	65
119	02730	232	45	02685	241	55
120	0,02962+	+231	− 36	0,02926+	+241	− 46
121	03193+	230	26	03167−	239	37
122	03423+	229	17	03406−	237	28
123	03652	227	− 9	03643+	237	18
124	03879	226	+ 1	03880	235	− 9
125	0,04105	+224	+ 10	0,04115−	+233	0
126	04329	223	19	04348	232	+ 10
127	04552−	220	28	04580−	229	18
128	04772+	219	37	04809+	228	28
129	04991	217	46	05037+	226	37
130	0,05208	+215	+ 55	0,05263	+224	+ 46
131	05423−	212	64	05487	221	55
132	05635+	211	73	05708+	219	65
133	05846−	207	81	05927+	217	74
134	06053+	206	91	06144	214	83
135	0,06259−	+203	+ 99	0,06358+	+212	+ 92

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	e = 0,30			e = 0,31		
v	M	D	D'	M	D	D'
135°	106°,396+	+1°,405	−1°,119	105°,277	+1°,417	−1°,131
136	107,801+	418	107	106,694−	430	120
137	109,219+	432	095	108,124	444	108
138	110,651−	444	083	109,568	458	095
139	112,095−	457	069	111,026−	471	082
140	113,552−	+1,470	−1,055	112,497	+1,485	−1,068
141	115,022−	482	040	113,982−	498	054
142	116,504	495	024	115,480−	511	038
143	117,999	508	1,008	116,991	524	022
144	119,507−	519	0,992	118,515−	538	1,004
145	121,026+	+1,532	−0,973	120,053	+1,550	−0,987
146	122,558+	544	955	121,603+	563	968
147	124,102+	556	936	123,166+	576	949
148	125,658	567	916	124,742	588	930
149	127,225+	579	895	126,330−	600	910
150	128,804	+1,590	−0,874	127,930−	+1,611	−0,889
151	130,394	601	853	129,541+	624	866
152	131,995	612	830	131,165−	635	844
153	133,607	622	807	132,800−	646	821
154	135,229	633	783	134,446−	656	797
155	136,862−	+1,642	−0,760	136,102+	+1,668	−0,771
156	138,504	652	734	137,770−	677	747
157	140,156	661	709	139,447+	688	720
158	141,817+	671	682	141,135	697	694
159	143,488	679	656	142,832	707	667
160	145,167	+1,688	−0,628	144,539−	+1,715	−0,640
161	146,855−	695	601	146,254	724	611
162	148,550+	704	572	147,978	732	582
163	150,254−	710	544	149,710+	740	553
164	151,964+	718	514	151,450+	748	523
165	153,682	+1,724	−0,484	153,198	+1,754	−0,493
166	155,406	730	454	154,952+	761	462
167	157,136+	737	423	156,713+	767	431
168	158,873−	741	393	158,480+	773	399
169	160,614	747	361	160,253+	778	367
170	162,361−	+1,750	−0,330	162,031+	+1,783	−0,335
171	164,111+	755	297	163,814+	788	302
172	165,866+	759	264	165,602−	791	270
173	167,625	762	232	167,393	795	237
174	169,387	765	199	169,188−	797	204
175	171,152−	+1,767	−0,167	170,985	+1,800	−0,170
176	172,919−	768	134	172,785	802	136
177	174,687+	770	100	174,587	804	102
178	176,457+	771	066	176,391−	804	069
179	178,228+	772	033	178,195	805	034
180	180,000	+1,772	−0,000	180,000	+1,805	−0,000

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	$e = 0{,}30$			$e = 0{,}31$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,06259 −	+203	+ 99	0,06358 +	+212	+ 92
136	06462 −	200	108	06570 −	208	100
137	06662 −	197	116	06778 +	206	109
138	06859	194	125	06984	203	118
139	07053 +	192	134	07187	200	126
140	0,07245 −	+188	+142	0,07387 −	+196	+134
141	07433 −	185	150	07583	193	143
142	07618 −	181	158	07776	190	152
143	07799 +	179	167	07966	186	160
144	07978 −	174	174	08152	183	168
145	0,08152 +	+171	+183	0,08335 −	+178	+175
146	08323 +	168	190	08513 +	175	184
147	08491	163	197	08688	171	191
148	08654 +	160	205	08859	167	199
149	08814	156	212	09026	163	206
150	0,08970 −	+151	+219	0,09189 −	+158	+213
151	09121 +	148	226	09347	154	221
152	09269 −	143	232	09501 +	150	228
153	09412 −	138	239	09651	145	234
154	09550 +	135	246	09796	140	241
155	0,09685 −	+129	+251	0,09936 +	+136	+248
156	09814 +	125	258	10072	131	253
157	09939 +	121	264	10203	126	259
158	10060 −	115	269	10329	121	265
159	10175 +	111	275	10450	116	271
160	0,10286	+106	+280	0,10566	+111	+276
161	10392	101	285	10677	106	281
162	10493	96	290	10783 −	100	285
163	10589 −	90	294	10883	95	290
164	10679 +	86	299	10978 −	89	295
165	0,10765 −	+ 80	+302	0,11067 +	+ 84	+300
166	10845	75	306	11151 +	79	304
167	10920	70	310	11230	73	307
168	10990 −	64	313	11303	67	310
169	11054 −	59	316	11370	62	314
170	0,11113 −	+ 53	+319	0,11432 −	+ 56	+316
171	11166	48	322	11488 −	50	319
172	11214 −	42	324	11538 −	44	321
173	11256	37	326	11582	38	323
174	11293 −	31	327	11620 +	33	326
175	0,11324 −	+ 25	+329	0,11653	+ 27	+327
176	11349	20	331	11680 −	20	328
177	11369	14	331	11700 +	15	329
178	11383	9	332	11715 +	9	330
179	11392 −	+ 2	332	11724	+ 3	330
180	0,11394 +	− 2	+333	0,11727	− 3	+330

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	$e = 0,32$			$e = 0,33$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+0,488	−0,000	0,000	+0,476	−0,000
1	0,488	488	012	0,476−	475	013
2	0,976+	489	025	0,951	476	025
3	1,465−	488	038	1,427	476	037
4	1,953	489	050	1,903	476	049
5	2,442	+0,489	−0,063	2,379+	+0,477	−0,062
6	2,931	490	075	2,856	477	074
7	3,421−	490	088	3,333	477	087
8	3,911−	490	101	3,810+	479	098
9	4,401+	492	112	4,289−	478	112
10	4,893−	+0,492	−0,126	4,767+	+0,480	−0,123
11	5,385−	493	138	5,247	480	136
12	5,878−	493	151	5,727+	481	148
13	6,371+	495	163	6,208+	483	160
14	6,866	496	175	6,691−	483	173
15	7,362−	+0,496	−0,188	7,174−	+0,484	−0,186
16	7,858+	498	200	7,658	485	198
17	8,356+	500	213	8,143+	487	210
18	8,856−	500	226	8,630	488	222
19	9,356	502	238	9,118	489	235
20	9,858	+0,503	−0,251	9,607+	+0,491	−0,247
21	10,361+	505	263	10,098	493	259
22	10,866+	507	275	10,591−	494	272
23	11,373	508	288	11,085−	495	285
24	11,881+	510	301	11,580+	498	297
25	12,391+	+0,512	−0,313	12,078	+0,500	−0,309
26	12,903+	514	325	12,578+	501	322
27	13,417+	516	338	13,079−	503	335
28	13,933+	518	351	13,582	506	347
29	14,451+	521	363	14,088+	507	360
30	14,972−	+0,522	−0,377	14,595	+0,510	−0,371
31	15,494	525	389	15,105	512	384
32	16,019	527	402	15,617+	515	396
33	16,546+	530	414	16,132+	518	409
34	17,076+	533	426	16,650−	519	422
35	17,609−	+0,535	−0,440	17,169+	+0,523	−0,433
36	18,144	538	452	17,692	526	446
37	18,682	541	464	18,218−	528	459
38	19,223	544	477	18,746	531	471
39	19,767−	547	490	19,277	535	483
40	20,314−	+0,550	−0,502	19,812−	+0,537	−0,496
41	20,864	553	515	20,349	541	508
42	21,417	557	527	20,890	544	521
43	21,974	560	540	21,434	548	533
44	22,534	564	552	21,982−	551	546
45	23,098	+0,567	−0,565	22,533	+0,555	−0,558

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	$e = 0{,}32$			$e = 0{,}33$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
0°	$\bar{1}{,}83251$	+ 1	−644	$\bar{1}{,}82607+$	+ 2	−653
1	83252+	5	643	82609	5	653
2	83257+	8	643	82614	8	653
3	83265+	12	643	82622+	12	653
4	83277−	14	643	82634−	15	653
5	$\bar{1}{,}83291$	+ 18	−642	$\bar{1}{,}82649-$	+ 18	−653
6	83309−	20	642	82667−	21	652
7	83329+	24	641	82688	24	651
8	83353+	28	641	82712+	28	650
9	83381−	30	641	82740+	32	650
10	$\bar{1}{,}83411$	+ 34	−639	$\bar{1}{,}82772-$	+ 34	−650
11	83445−	37	639	82806	38	649
12	83482−	40	638	82844−	41	648
13	83522−	43	637	82885−	44	647
14	83565−	46	636	82929−	47	646
15	$\bar{1}{,}83611$	+ 50	−635	$\bar{1}{,}82976+$	+ 51	−644
16	83661−	52	634	83027	54	644
17	83713+	56	632	83081	57	642
18	83769+	59	631	83138	61	641
19	83828+	63	629	83199−	63	640
20	$\bar{1}{,}83891-$	+ 65	−629	$\bar{1}{,}83262+$	+ 67	−638
21	83956	68	627	83329	70	636
22	84024+	72	625	83399+	74	635
23	84096	75	623	83473−	76	634
24	84171−	78	622	83549+	80	631
25	$\bar{1}{,}84249-$	+ 81	−620	$\bar{1}{,}83629$	+ 83	−630
26	84330−	84	618	83712	86	628
27	84414	87	616	83798	89	626
28	84501	90	614	83887+	93	623
29	84591+	94	611	83980	96	622
30	$\bar{1}{,}84685$	+ 96	−609	$\bar{1}{,}84076-$	+ 99	−620
31	84781+	100	606	84175−	102	617
32	84881	103	604	84277−	105	615
33	84984−	105	602	84382−	108	612
34	85089+	109	599	84490	111	610
35	$\bar{1}{,}85198$	+112	−597	$\bar{1}{,}84601+$	+115	−607
36	85310−	114	594	84716	117	604
37	85424+	118	591	84833+	121	601
38	85542	121	588	84954	124	598
39	85663	124	585	85078	127	596
40	$\bar{1}{,}85787-$	+126	−582	$\bar{1}{,}85205-$	+130	−593
41	85913+	130	578	85335−	132	590
42	86043	133	576	85467+	136	586
43	86176−	135	573	85603+	139	583
44	86311	139	569	85742+	142	579
45	$\bar{1}{,}86450-$	+141	−566	$\bar{1}{,}85884$	+145	−576

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	$e = 0{,}32$			$e = 0{,}33$		
v	M	D	D'	M	D	D'
45°	23°,098	+0°,567	−0°,565	22°,533	+0°,555	−0°,558
46	23,665	571	577	23,088−	558	571
47	24,236+	575	590	23,646+	563	583
48	24,811+	579	602	24,209	566	596
49	25,390	583	615	24,775+	571	608
50	25,973	+0,587	−0,627	25,346−	+0,574	−0,621
51	26,560	591	640	25,920+	579	632
52	27,151−	596	652	26,499+	584	645
53	27,747	600	664	27,083−	587	658
54	28,347−	605	677	27,670+	593	670
55	28,952	+0,610	−0,689	28,263−	+0,597	−0,682
56	29,562−	614	702	28,860−	602	695
57	30,176	619	714	29,462−	607	707
58	30,795	624	726	30,069−	612	719
59	31,419+	630	738	30,681−	617	732
60	32,049−	+0,634	−0,751	31,298−	+0,622	−0,744
61	32,683+	640	763	31,920+	628	735
62	33,323+	646	775	32,548	634	768
63	33,969	651	787	33,182−	639	780
64	34,620	657	799	33,821−	645	792
65	35,277	+0,663	−0,811	34,466−	+0,650	−0,805
66	35,940−	669	824	35,116+	657	816
67	36,609−	675	836	35,773+	663	828
68	37,284−	681	848	36,436+	670	839
69	37,965	687	859	37,106	676	852
70	38,652+	+0,695	−0,870	37,782	+0,682	−0,864
71	39,347−	701	883	38,464+	690	875
72	40,048−	707	894	39,154−	696	887
73	40,755	715	905	39,850	703	899
74	41,470	721	917	40,553	710	910
75	42,191+	+0,729	−0,928	41,263+	+0,718	−0,921
76	42,920+	737	939	41,981	725	933
77	43,657−	744	951	42,706+	733	944
78	44,401−	751	962	43,439	741	955
79	45,152	759	972	44,180−	748	967
80	45,911+	+0,767	−0,983	44,928	+0,757	−0,977
81	46,678+	776	0,993	45,685−	764	988
82	47,454	783	1,005	46,449+	773	0,998
83	48,237+	792	015	47,222+	782	1,009
84	49,029+	801	025	48,004	791	020
85	49,830	+0,809	−1,035	48,795−	+0,799	−1,031
86	50,639+	818	045	49,594	808	041
87	51,457+	827	055	50,402	818	050
88	52,284+	837	064	51,220−	826	061
89	53,121	846	075	52,046+	837	070
90	53,967−	+0,855	−1,084	52,883	+0,846	−1,080

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	$e = 0{,}32$			$e = 0{,}33$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}86450-$	+141	−566	$\bar{1}{,}85884$	+145	−576
46	86591	144	562	86029	148	572
47	86735	147	558	86177	151	569
48	86882	150	554	86328−	153	565
49	87032	153	551	86481+	157	561
50	$\bar{1}{,}87185-$	+155	−547	$\bar{1}{,}86638$	+160	−557
51	87340	158	542	86798−	162	554
52	87498+	161	538	86960	165	549
53	87659+	164	534	87125+	168	545
54	87823+	167	530	87293+	171	541
55	$\bar{1}{,}87990$	+169	−526	$\bar{1}{,}87464+$	+174	−536
56	88159	172	521	87638	176	532
57	88331	174	517	87814+	180	527
58	88505+	178	511	87994−	181	524
59	88683−	179	508	88175+	185	518
60	$\bar{1}{,}88862+$	+183	−502	$\bar{1}{,}88360$	+187	−514
61	89045	185	498	88547+	190	509
62	89230−	187	493	88737+	193	504
63	89417+	190	487	88930	195	499
64	89607	193	482	89125	198	494
65	$\bar{1}{,}89800-$	+194	−477	$\bar{1}{,}89323-$	+200	−489
66	89994+	198	471	89523	203	483
67	90192−	199	466	89726−	205	478
68	90391+	202	460	89931−	207	473
69	90593+	205	455	90138+	210	466
70	$\bar{1}{,}90798-$	+206	−450	$\bar{1}{,}90348+$	+213	−461
71	91004+	209	443	90561−	214	456
72	91213	211	438	90775+	217	449
73	91424	213	432	90992+	220	443
74	91637+	216	425	91212−	221	438
75	$\bar{1}{,}91853-$	+217	−420	$\bar{1}{,}91433+$	+224	−431
76	92070	219	413	91657	226	425
77	92289+	222	406	91883−	228	419
78	92511	223	400	92111−	230	412
79	92734+	226	393	92341−	232	406
80	$\bar{1}{,}92960-$	+227	−387	$\bar{1}{,}92573-$	+234	−399
81	93187	229	380	92807−	236	393
82	93416	231	373	93043−	237	386
83	93647	232	367	93280+	240	378
84	93879+	235	359	93520	241	372
85	$\bar{1}{,}94114-$	+236	−353	$\bar{1}{,}93761$	+243	−364
86	94350−	237	346	94004+	245	357
87	94587	239	338	94249	246	350
88	94826	240	331	94495+	248	342
89	95066+	242	323	94743+	250	335
90	$\bar{1}{,}95308+$	+244	−315	$\bar{1}{,}94993-$	+250	−328

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	$e = 0{,}32$			$e = 0{,}33$		
v	M	D	D'	M	D	D'
90°	53°,967−	+0°,855	−1°,084	52°,883	+0°,846	−1°,080
91	54,822−	865	093	53,729	856	089
92	55,687−	874	102	54,585−	866	098
93	56,561	885	110	55,451−	876	108
94	57,446	895	119	56,327	886	116
95	58,341−	+0,905	−1,128	57,213+	+0,897	−1,124
96	59,246−	915	136	58,110+	908	133
97	60,161	926	143	59,018	919	141
98	61,087+	937	150	59,937−	929	149
99	62,024+	948	158	60,866+	941	156
100	62,972	+0,959	−1,165	61,807+	+0,953	−1,164
101	63,931	970	171	62,760−	963	171
102	64,901+	982	178	63,723+	976	177
103	65,883	0,993	184	64,699	0,987	184
104	66,876+	1,005	190	65,686+	1,000	190
105	67,881+	+1,017	−1,195	66,686	+1,012	−1,196
106	68,898+	029	200	67,698−	024	202
107	69,927+	041	205	68,722	037	207
108	70,968+	054	209	69,759−	049	212
109	72,022	066	214	70,808	062	216
110	73,088	+1,078	−1,218	71,870+	+1,076	−1,220
111	74,166+	092	220	72,946	088	224
112	75,258	104	224	74,034+	102	226
113	76,362	117	226	75,136+	116	229
114	77,479−	131	227	76,252	129	232
115	78,610	+1,144	−1,229	77,381	+1,143	−1,234
116	79,754	157	230	78,524−	156	236
117	80,911+	171	231	79,680+	171	236
118	82,082	185	231	80,851+	185	237
119	83,267−	198	231	82,036+	200	236
120	84,465	+1,212	−1,229	83,236−	+1,213	−1,237
121	85,677	226	228	84,449+	228	235
122	86,903+	240	226	85,677+	243	233
123	88,143+	255	223	86,920+	258	231
124	89,398	268	220	88,178	272	229
125	90,666+	+1,283	−1,216	89,450+	+1,288	−1,225
126	91,949+	297	211	90,738−	302	221
127	93,246−	312	206	92,040−	317	217
128	94,558	326	201	93,357	332	211
129	95,884+	341	195	94,689+	348	205
130	97,225	+1,355	−1,188	96,037	+1,363	−1,199
131	98,580	370	180	97,400−	378	192
132	99,950−	384	172	98,778−	393	184
133	101,334	399	163	100,171−	408	175
134	102,733−	413	154	101,579	424	166
135	104,146	+1,428	−1,143	103,003−	+1,438	−1,156

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	e = 0,32			e = 0,33		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}$,95308+	+244	−315	$\bar{1}$,94993−	+250	−328
91	95552−	244	309	95243+	253	320
92	95796−	246	300	95496−	253	313
93	96042−	247	293	95749+	253	304
94	96289−	248	283	96004	256	297
95	$\bar{1}$,96537−	+249	−277	$\bar{1}$,96260	+257	−289
96	96786−	250	269	96517	258	281
97	97036	251	261	96775+	259	272
98	97287	252	253	97034+	261	264
99	97539−	252	244	97295−	260	257
100	$\bar{1}$,97791	+253	−236	$\bar{1}$,97555+	+262	−247
101	98044+	254	227	97817	263	239
102	98298+	255	218	98080−	263	231
103	98553−	255	210	98343−	263	223
104	98808−	255	202	98606	264	213
105	$\bar{1}$,99063	+256	−193	$\bar{1}$,98870	+264	−205
106	99319−	255	183	99134+	265	196
107	99574+	256	175	99399	265	187
108	$\bar{1}$,99830+	256	166	99664	265	178
109	0,00086+	256	157	$\bar{1}$,99929−	265	169
110	0,00342+	+256	−148	0,00194−	+265	−160
111	00598	256	139	00459−	264	151
112	00854	255	131	00723+	265	141
113	01109	255	121	00988	264	133
114	01364	255	112	01252	264	123
115	0,01619−	+253	−103	0,01516	+263	−114
116	01872+	254	93	01779	262	105
117	02126−	252	85	02041+	262	95
118	02378	252	75	02303	261	86
119	02630−	250	66	02564	260	76
120	0,02880+	+250	− 56	0,02824	+259	− 67
121	03130	248	47	03083	258	58
122	03378	247	37	03341−	256	48
123	03625+	246	28	03597	255	38
124	03871	244	19	03852	254	29
125	0,04115	+243	− 9	0,04106−	+251	− 20
126	04358−	240	− 1	04357+	251	9
127	04598+	239	+ 10	04608−	248	− 1
128	04837+	237	19	04856	246	+ 9
129	05074+	235	28	05102+	245	19
130	0,05309+	+233	+ 38	0,05347−	+242	+ 28
131	05542	231	47	05589−	239	37
132	05773−	228	55	05828+	238	47
133	06001	226	65	06066	235	56
134	06227−	223	74	06301−	232	65
135	0,06450−	+220	+ 83	0,06533−	+229	+ 74

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	$e = 0,32$			$e = 0,33$		
v	M	D	D'	M	D	D'
135°	104°,146	+1°,428	−1°,143	103°,003−	+1°,438	−1°,156
136	105,574−	442	133	104,441+	454	145
137	107,016	457	121	105,895+	469	133
138	108,473−	471	109	107,364+	484	121
139	109,944−	485	096	108,848+	500	108
140	111,429	+1,499	−1,081	110,348−	+1,514	−1,095
141	112,928+	514	066	111,862−	529	081
142	114,442	527	051	113,391−	543	065
143	115,969−	542	035	114,934+	559	049
144	117,511	555	018	116,493−	572	033
145	119,066	+1,569	−1,001	118,065+	+1,587	−1,015
146	120,635−	582	0,983	119,652+	601	0,996
147	122,217	595	964	121,253+	615	977
148	123,812	608	944	122,868+	629	957
149	125,420+	621	923	124,497+	643	937
150	127,041−	+1,634	−0,901	126,140−	+1,655	−0,916
151	128,675	646	880	127,795+	669	893
152	130,321	658	857	129,464	682	871
153	131,979+	670	833	131,146−	694	848
154	133,649	682	809	132,840−	706	824
155	135,331−	+1,692	−0,785	134,546−	+1,718	−0,798
156	137,023	704	759	136,264	730	773
157	138,727−	714	733	137,994−	740	746
158	140,441−	724	707	139,734+	752	718
159	142,165	734	679	141,486	762	691
160	143,899+	+1,744	−0,651	143,248+	+1,773	−0,662
161	145,643	753	622	145,021−	782	634
162	147,396−	761	593	146,803−	791	605
163	149,157+	770	563	148,594	800	574
164	150,927	778	533	150,394	808	543
165	152,705−	+1,785	−0,503	152,202+	+1,817	−0,512
166	154,490	792	471	154,019	824	480
167	156,282	799	439	155,843−	831	448
168	158,081	805	407	157,674−	837	416
169	159,886−	810	375	159,511	843	382
170	161,696	+1,816	−0,342	161,354+	+1,849	−0,348
171	163,512−	820	309	163,203	854	315
172	165,332	824	275	165,057−	858	281
173	167,156+	828	241	166,915	862	246
174	168,984+	831	207	168,777	865	212
175	170,815+	+1,834	−0,173	170,642+	+1,869	−0,176
176	172,649+	836	138	172,511−	870	142
177	174,485	837	104	174,381	872	106
178	176,322+	839	069	176,253	873	071
179	178,161	839	035	178,126+	874	035
180	180,000	+1,839	−0,000	180,000	+1,874	−0,000

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	$e = 0{,}32$			$e = 0{,}33$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,06450 −	+220	+ 83	0,06533 −	+229	+ 74
136	06670	217	92	06762	226	84
137	06887 −	215	101	06988 +	224	93
138	07102 −	211	110	07212 −	220	102
139	07313	208	119	07432 −	217	111
140	0,07521 +	+205	+128	0,07649 −	+213	+119
141	07726	202	136	07862	210	129
142	07928 −	198	144	08072	206	137
143	08126 −	194	152	08278 +	203	146
144	08320 −	190	161	08481	198	154
145	0,08510 +	+187	+169	0,08679 +	+195	+163
146	08697 −	182	177	08874	190	171
147	08879 +	179	185	09064 +	187	179
148	09058	174	193	09251 −	182	186
149	09232	170	201	09433 −	177	194
150	0,09402	+166	+208	0,09610	+173	+202
151	09568 −	161	215	09783 −	168	209
152	09729 −	156	222	09951	163	217
153	09885	152	229	10114	159	224
154	10037 −	147	236	10273 −	153	230
155	0,10184 −	+141	+242	0,10426	+148	+237
156	10325 +	137	249	10574	143	244
157	10462 +	132	255	10717	138	250
158	10594	127	261	10855	132	256
159	10721 −	121	266	10987	127	262
160	0,10842	+116	+272	0,11114	+121	+268
161	10958	110	277	11235	116	273
162	11068 +	105	283	11351 −	109	278
163	11173 +	100	287	11460 +	104	284
164	11273	94	291	11564 +	98	288
165	0,11367 −	+ 88	+295	0,11662 +	+ 92	+293
166	11455 −	82	299	11754 +	86	297
167	11537 −	76	303	11840 +	80	301
168	11613	71	307	11920 +	74	304
169	11684 −	64	310	11994	67	307
170	0,11748	+ 59	+313	0,12061 +	+ 62	+311
171	11807 −	52	316	12123 −	54	313
172	11859	46	318	12177 +	49	316
173	11905 +	41	321	12226	42	318
174	11946 −	34	322	12268	36	320
175	0,11980 −	+ 28	+324	0,12304	+ 29	+321
176	12008 −	21	325	12333	23	323
177	12029 +	16	327	12356	16	324
178	12045	9	327	12372	10	325
179	12054 +	+ 3	328	12382	+ 3	325
180	0,12057 +	− 3	+328	0,12385	− 3	+325

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	$e = 0{,}34$			$e = 0{,}35$		
v	M	D	D'	M	D	D'
0°	0°,000	+0°,463	−0°,000	0°,000	+0°,451	−0°,000
1	0,463+	463	012	0,451	451	012
2	0,926+	464	024	0,902	451	024
3	1,390	464	037	1,353+	452	036
4	1,854−	463	049	1,805	452	048
5	2,317+	+0,465	−0,060	2,257−	+0,452	−0,060
6	2,782−	464	073	2,709−	452	072
7	3,246+	466	085	3,161+	453	084
8	3,712−	465	098	3,614+	454	096
9	4,177+	467	109	4,068	454	108
10	4,644	+0,467	−0,122	4,522	+0,455	−0,120
11	5,111	468	134	4,977	456	132
12	5,579	469	146	5,433	457	144
13	6,048	470	158	5,890−	457	157
14	6,518−	470	171	6,347	459	168
15	6,988+	+0,472	−0,182	6,806−	+0,459	−0,180
16	7,460+	473	195	7,265+	461	192
17	7,933+	475	207	7,726	462	204
18	8,408−	475	220	8,188+	464	216
19	8,883	477	231	8,652−	464	229
20	9,360	+0,479	−0,244	9,116+	+0,467	−0,240
21	9,839−	480	256	9,583−	467	253
22	10,319−	481	269	10,050+	470	264
23	10,800	483	280	10,520−	471	277
24	11,283+	486	292	10,991−	473	289
25	11,769−	+0,487	−0,305	11,464−	+0,474	−0,301
26	12,256−	488	318	11,938+	477	313
27	12,744+	491	329	12,415	479	325
28	13,235+	493	341	12,894−	480	338
29	13,728+	496	354	13,374+	483	349
30	14,224−	+0,497	−0,367	13,857+	+0,486	−0,361
31	14,721+	500	378	14,343−	487	374
32	15,221	502	391	14,830	490	386
33	15,723+	505	403	15,320	493	398
34	16,228+	508	415	15,813−	495	411
35	16,736	+0,510	−0,428	16,308	+0,498	−0,423
36	17,246	513	440	16,806−	500	435
37	17,759	516	453	17,306+	504	447
38	18,275	519	465	17,810	506	459
39	18,794−	522	478	18,316+	510	471
40	19,316−	+0,525	−0,490	18,826	+0,513	−0,484
41	19,841−	528	502	19,339−	516	496
42	20,369	532	514	19,855−	519	508
43	20,901	535	527	20,374	523	520
44	21,436	539	539	20,897	526	533
45	21,975−	+0,542	−0,552	21,423+	+0,530	−0,544

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	$e = 0{,}34$			$e = 0{,}35$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
0°	$\bar{1}{,}81954+$	+ 2	−663	$\bar{1}{,}81291+$	+ 2	−673
1	81956	5	663	81293	5	673
2	81961	8	663	81298	9	673
3	81969+	12	662	81307−	12	673
4	81981+	15	662	81319−	15	673
5	$\bar{1}{,}81996+$	+ 19	−662	$\bar{1}{,}81334$	+ 19	−672
6	82015	22	662	81353	22	672
7	82037−	25	662	81375+	26	671
8	82062−	28	661	81401	29	671
9	82090+	32	660	81430	33	670
10	$\bar{1}{,}82122$	+ 35	−659	$\bar{1}{,}81463-$	+ 36	−670
11	82157+	39	658	81499−	39	669
12	82196	42	658	81538	43	668
13	82238−	45	657	81581	46	667
14	82283	49	656	81627	50	666
15	$\bar{1}{,}82332-$	+ 51	−655	$\bar{1}{,}81677-$	+ 53	−666
16	82383+	56	653	81730−	56	664
17	82439−	58	653	81786	60	663
18	82497	62	651	81846	63	662
19	82559	65	650	81909	67	660
20	$\bar{1}{,}82624$	+ 69	−648	$\bar{1}{,}81976-$	+ 70	−659
21	82693−	71	647	82046−	73	658
22	82764+	75	645	82119	77	656
23	82839+	79	643	82196−	80	654
24	82918−	81	642	82276	83	653
25	$\bar{1}{,}82999+$	+ 85	−640	$\bar{1}{,}82359+$	+ 87	−650
26	83084+	88	638	82446	90	649
27	83172+	92	636	82536+	94	647
28	83264	94	634	82630−	97	645
29	83358+	98	631	82727−	100	643
30	$\bar{1}{,}83456+$	+102	−629	$\bar{1}{,}82827-$	+103	−641
31	83558−	104	628	82930	107	638
32	83662	108	625	83037	110	636
33	83770−	110	623	83147	114	634
34	83880+	114	619	83261+	116	632
35	$\bar{1}{,}83994+$	+118	−617	$\bar{1}{,}83377$	+120	−629
36	84112−	120	615	83497−	123	626
37	84232	124	612	83620	126	623
38	84356−	126	610	83746+	130	620
39	84482+	130	606	83876	133	617
40	$\bar{1}{,}84612$	+133	−603	$\bar{1}{,}84009$	+136	−615
41	84745	136	600	84145	139	611
42	84881+	139	597	84284	143	608
43	85020+	143	593	84427−	145	605
44	85163−	145	591	84572+	149	601
45	$\bar{1}{,}85308$	+149	−587	$\bar{1}{,}84721$	+152	−598

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	$e = 0,34$			$e = 0,35$		
v	M	D	D'	M	D	D'
45°	21°,975 −	+0°,542	−0°,552	21°,423 +	+0°,530	−0°,544
46	22,517	546	564	21,953 +	534	557
47	23,063 +	550	576	22,487	538	569
48	23,613 +	554	588	23,025	542	582
49	24,167 +	558	600	23,567 −	545	594
50	24,725 +	+0,563	−0,613	24,112 +	+0,550	−0,606
51	25,288 −	566	626	24,662	554	618
52	25,854	571	638	25,216 +	559	630
53	26,425	575	650	25,775	563	643
54	27,000 +	581	662	26,338	568	655
55	27,581 −	+0,584	−0,675	26,906	+0,572	−0,668
56	28,165 +	590	687	27,478 +	578	679
57	28,755	595	699	28,056 −	582	692
58	29,350 −	599	712	28,638	588	704
59	29,949 +	605	723	29,226 −	592	717
60	30,554 +	+0,611	−0,736	29,818 +	+0,598	−0,728
61	31,165 −	615	749	30,416 +	604	740
62	31,780 +	622	760	31,020	609	753
63	32,402 −	627	773	31,629	615	765
64	33,029 −	632	785	32,244	621	777
65	33,661 +	+0,639	−0,796	32,865	+0,627	−0,789
66	34,300 +	645	808	33,492 −	633	802
67	34,945 +	652	820	34,125 −	639	814
68	35,597 −	657	833	34,764	646	825
69	36,254 +	664	844	35,410 −	652	837
70	36,918 +	+0,671	−0,856	36,062	+0,659	−0,849
71	37,589	678	868	36,721	666	861
72	38,267	684	880	37,387	673	873
73	38,951 +	692	891	38,060	680	885
74	39,643	699	903	38,740	687	896
75	40,342	+0,706	−0,915	39,427 +	+0,695	−0,908
76	41,048 +	714	926	40,122 +	703	919
77	41,762 +	722	937	40,825 −	710	931
78	42,484	729	949	41,535	718	942
79	43,213 +	738	960	42,253 +	727	953
80	43,951	+0,746	−0,971	42,980 −	+0,734	−0,965
81	44,697 −	754	983	43,714 +	744	976
82	45,451 −	762	0,993	44,458 −	751	988
83	46,213	771	1,004	45,209 +	761	0,998
84	46,984 +	780	014	45,970 −	769	1,009
85	47,764 +	+0,789	−1,025	46,739 +	+0,779	−1,019
86	48,553 +	799	035	47,518	788	030
87	49,352 −	807	046	48,306	797	041
88	50,159 +	817	056	49,103 +	808	051
89	50,976 +	827	065	49,911 −	817	062
90	51,803	+0,837	−1,075	50,728 −	+0,827	−1,072

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	$e = 0{,}34$			$e = 0{,}35$		
v	$log \frac{r}{a}$	D	D'	$log \frac{r}{a}$	D	D'
45°	$\bar{1}$,85308	+149	−587	$\bar{1}$,84721	+152	−598
46	85457−	151	584	84873	155	595
47	85608	155	580	85028	158	591
48	85763−	157	577	85186+	162	587
49	85920	161	572	85348−	164	584
50	$\bar{1}$,86081−	+163	−569	$\bar{1}$,85512	+167	−580
51	86244	167	565	85679+	171	576
52	86411−	169	561	85850	173	572
53	86580	172	557	86023+	177	568
54	86752+	176	552	86200	179	564
55	$\bar{1}$,86928−	+178	−549	$\bar{1}$,86379+	+183	−559
56	87106−	181	544	86562	185	556
57	87287−	183	540	86747+	189	551
58	87470+	187	534	86936−	191	547
59	87657	189	530	87127	194	542
60	$\bar{1}$,87846+	+192	−525	$\bar{1}$,87321	+197	−537
61	88038+	195	520	87518	200	533
62	88233+	198	515	87718−	202	528
63	88431	200	511	87920+	206	522
64	88631	203	505	88126−	208	518
65	$\bar{1}$,88834	+206	−500	$\bar{1}$,88334−	+210	−513
66	89040−	208	496	88544+	214	507
67	89248−	210	490	88758	216	502
68	89458+	214	484	88974	219	496
69	89672−	215	479	89193	221	491
70	$\bar{1}$,89887+	+218	−473	$\bar{1}$,89414+	+224	−485
71	90105+	221	467	89638	227	479
72	90326	223	461	89865−	229	474
73	90549	225	455	90094−	231	468
74	90774+	228	449	90325	234	462
75	$\bar{1}$,91002	+230	−443	$\bar{1}$,90559−	+236	−456
76	91232	232	437	90795	238	450
77	91464	235	431	91033+	241	443
78	91699−	236	425	91274	243	437
79	91935	239	418	91517	245	430
80	$\bar{1}$,92174−	+240	−412	$\bar{1}$,91762+	+248	−424
81	92414+	243	404	92010−	249	418
82	92657	245	398	92259	252	410
83	92902−	246	391	92511−	253	404
84	93148+	249	384	92764+	256	396
85	$\bar{1}$,93397−	+250	−377	$\bar{1}$,93020−	+257	−390
86	93647	252	370	93277	259	382
87	93899	254	363	93536+	261	375
88	94153−	255	356	93797+	263	367
89	94408	257	348	94060+	265	360
90	$\bar{1}$,94665	+258	−340	$\bar{1}$,94325−	+266	−353

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	e = 0,34			e = 0,35		
v	M	D	D'	M	D	D'
90°	51°,803	+0°,837	−1°,075	50°,728 −	+0°,827	−1°,072
91	52,640 −	847	085	51,555 −	837	082
92	53,487 −	856	095	52,392	848	091
93	54,343 +	868	103	53,240 −	858	101
94	55,211	878	113	54,098	869	110
95	56,089 −	+0,888	−1,122	54,967	+0,880	−1,119
96	56,977 +	900	130	55,847	891	128
97	57,877	911	139	56,738 +	903	136
98	58,788	922	147	57,641	914	145
99	59,710	933	155	58,555	926	153
100	60,643 +	+0,946	−1,162	59,481	+0,938	−1,161
101	61,589 −	957	170	60,419 −	950	169
102	62,546 −	969	177	61,369 −	962	177
103	63,515	981	184	62,331	975	184
104	64,496	0,994	190	63,306 −	0,987	191
105	65,490	+1,006	−1,197	64,293	+1,001	−1,197
106	66,496	019	202	65,294 −	013	204
107	67,515	032	208	66,307	027	209
108	68,547	045	213	67,334 −	040	215
109	69,592	058	218	68,374	054	220
110	70,650 +	+1,072	−1,222	69,428	+1,068	−1,225
111	71,722 +	086	226	70,496 −	081	230
112	72,808 −	099	231	71,577 +	096	233
113	73,907 −	113	234	72,673 +	111	237
114	75,020 −	127	236	73,784 −	124	241
115	76,147	+1,141	−1,239	74,908 +	+1,140	−1,243
116	77,288 +	156	240	76,048	154	246
117	78,444	170	242	77,202 +	170	247
118	79,614 +	186	242	78,372 −	184	249
119	80,800 −	199	244	79,556 +	200	249
120	81,999 +	+1,215	−1,243	80,756 +	+1,216	−1,249
121	83,214	230	242	81,972	231	250
122	84,444	245	241	83,203	247	249
123	85,689	260	239	84,450	263	247
124	86,949 +	276	236	85,713 −	278	246
125	88,225 +	+1,292	−1,234	86,991 +	+1,295	−1,242
126	89,517 −	306	231	88,286 +	311	239
127	90,823 +	323	226	89,597 +	328	236
128	92,146	338	221	90,925 −	343	232
129	93,484	354	216	92,268 +	361	226
130	94,838 +	+1,370	−1,209	93,629 −	+1,376	−1,221
131	96,208	386	203	95,005 +	394	214
132	97,594	402	195	96,399 −	410	207
133	98,996 −	417	187	97,809 −	426	199
134	100,413 +	434	178	99,235 +	444	190
135	101,847	+1,449	−1,168	100,679 −	+1,459	−1,181

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	$e = 0{,}34$			$e = 0{,}35$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}94665$	+258	−340	$\bar{1}{,}94325-$	+266	−353
91	94923+	260	332	94591	267	345
92	95183+	262	325	94858+	270	337
93	95445−	262	317	95128−	270	330
94	95707+	264	309	95398	272	322
95	$\bar{1}{,}95971+$	+265	−301	$\bar{1}{,}95670$	+273	−314
96	96236+	267	293	95943+	275	305
97	96503−	267	285	96218	275	298
98	96770	268	277	96493+	277	289
99	97038+	270	268	96770	278	281
100	$\bar{1}{,}97308-$	+270	−260	$\bar{1}{,}97048$	+278	−273
101	97578	271	252	97326+	280	263
102	97849	271	243	97606	280	255
103	98120+	273	234	97886	281	246
104	98393−	272	226	98167	282	238
105	$\bar{1}{,}98665+$	+273	−216	$\bar{1}{,}98449-$	+282	−229
106	98938+	274	207	98731−	282	221
107	99212	274	199	99013	283	211
108	99486−	274	190	99296	283	202
109	$\bar{1}{,}99760-$	274	181	99579	283	193
110	0,00034−	+274	−172	$\bar{1}{,}99862$	+283	−184
111	00308−	274	163	0,00145+	283	174
112	00582−	273	154	00428+	283	165
113	00855+	274	144	00711+	283	155
114	01129−	273	135	00994	282	146
115	0,01402−	+272	−126	0,01276+	+282	−136
116	01674+	272	116	01558+	282	127
117	01946	271	106	01840−	280	118
118	02217+	271	97	02120+	280	108
119	02488−	269	88	02400+	279	98
120	0,02757	+268	− 78	0,02679+	+278	− 88
121	03025+	268	68	02957+	277	79
122	03293−	266	59	03234	276	69
123	03559−	264	49	03510−	274	60
124	03823	263	39	03784	273	50
125	0,04086	+262	− 29	0,04057−	+271	− 40
126	04348−	259	20	04328−	269	31
127	04607+	258	10	04597	267	21
128	04865	256	− 1	04864+	266	10
129	05121	254	+ 9	05130	263	− 1
130	0,05375−	+251	+ 18	0,05393	+261	+ 9
131	05626	249	28	05654+	259	19
132	05875+	247	38	05913	256	28
133	06122	244	47	06169	254	38
134	06366	241	57	06423−	250	47
135	0,06607+	+239	+ 66	0,06673+	+248	+ 58

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	e = 0,34			e = 0,35		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
135	101,847	+1,449	−1,168	100,679−	+1,459	−1,181
136	103,296+	466	158	102,138+	477	170
137	104,762−	481	147	103,615	493	160
138	106,243	497	135	105,108+	510	148
139	107,740	513	122	106,618	526	136
140	109,253	+1,528	−1,109	108,144+	+1,543	−1,122
141	110,781+	545	094	109,687	559	108
142	112,326−	559	080	111,246+	576	093
143	113,885	575	063	112,822−	591	078
144	115,460	590	047	114,413+	608	061
145	117,050+	+1,606	−1,029	116,021	+1,623	−1,044
146	118,656−	620	1,012	117,644+	640	025
147	120,276−	635	0,992	119,284−	654	1,007
148	121,911−	649	973	120,938+	670	0,987
149	123,560	664	952	122,608+	685	968
150	125,224−	+1,678	−0,931	124,293+	+1,700	−0,945
151	126,902−	691	909	125,993+	715	922
152	128,593	705	885	127,708	729	900
153	130,298	718	861	129,437−	742	876
154	132,016+	732	837	131,179+	757	851
155	133,748−	+1,743	−0,812	132,936	+1,770	−0,826
156	135,491+	757	785	134,706−	782	800
157	137,248−	768	760	136,488+	796	772
158	139,016−	779	732	138,284−	807	745
159	140,795	791	704	140,091+	820	716
160	142,586−	+1,801	−0,675	141,911−	+1,830	−0,688
161	144,387	811	646	143,741+	842	657
162	146,198+	822	615	145,583	852	627
163	148,020	831	585	147,435	862	596
164	149,851−	839	554	149,297	872	564
165	151,690+	+1,849	−0,521	151,169−	+1,880	−0,532
166	153,539−	856	490	153,049	889	499
167	155,395−	863	457	154,938	897	466
168	157,258+	871	423	156,835−	904	432
169	159,129−	877	390	158,739	911	398
170	161,006−	+1,882	−0,356	160,650	+1,917	−0,363
171	162,888	888	321	162,567	923	328
172	164,776	893	286	164,490−	927	292
173	166,669−	896	252	166,417+	933	256
174	168,565+	901	215	168,350−	935	221
175	170,466−	+1,903	−0,181	170,285+	+1,940	−0,183
176	172,369	906	144	172,225−	941	148
177	174,275−	907	109	174,166+	944	111
178	176,182	909	072	176,110−	945	074
179	178,091	909	036	178,055−	945	037
180	180,000	+1,909	−0,000	180,000	+1,945	−0,000

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	$e = 0{,}34$			$e = 0{,}35$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,06607+	+239	+ 66	0,06673+	+248	+ 58
136	06846−	235	75	06921	245	67
137	07081+	233	85	07166	241	76
138	07314−	229	93	07407+	239	86
139	07543−	225	103	07646−	234	95
140	0,07768+	+223	+112	0,07880+	+232	+105
141	07991−	218	121	08112−	227	113
142	08209+	215	130	08339	224	122
143	08424	211	139	08563−	219	131
144	08635	207	147	08782+	216	140
145	0,08842	+203	+156	0,08998−	+211	+149
146	09045−	198	164	09209	207	157
147	09243+	194	173	09416−	202	165
148	09437+	190	181	09618	197	174
149	09627	185	188	09815+	193	183
150	0,09812	+180	+196	0,10008+	+188	+190
151	09992+	176	204	10196	183	198
152	10168−	170	211	10379	178	206
153	10338	165	219	10557−	172	213
154	10503+	160	226	10729	167	220
155	0,10663+	+155	+233	0,10896	+161	+227
156	10818	149	239	11057+	156	235
157	10967+	144	246	11213	150	241
158	11111	138	252	11363	144	248
159	11249+	133	258	11507+	139	254
160	0,11382−	+126	+264	0,11646−	+132	+259
161	11508+	121	270	11778−	126	265
162	11629	115	275	11904−	119	270
163	11744−	108	279	12023+	114	276
164	11852+	103	285	12137	107	281
165	0,11955−	+ 96	+289	0,12244	+100	+285
166	12051	90	293	12344+	94	290
167	12141	83	297	12438	87	294
168	12224+	77	301	12525+	81	298
169	12301+	71	305	12606	74	301
170	0,12372	+ 64	+308	0,12680−	+ 66	+304
171	12436	57	310	12746+	60	308
172	12493+	51	313	12806+	53	311
173	12544	44	315	12859+	46	313
174	12588	37	317	12905+	40	315
175	0,12625+	+ 31	+320	0,12945−	+ 31	+316
176	12656	24	320	12976+	25	318
177	12680	17	321	13001+	18	319
178	12697	10	322	13019	11	320
179	12707	+ 3	323	13030	+ 3	320
180	0,12710+	− 3	+323	0,13033+	− 3	+321

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	e = 0,36			e = 0,37		
v	M	D	D'	M	D	D'
0°	0°,000	+0°,439	−0°,000	0°,000	+0°,427	−0°,000
1	0,439	439	012	0,427+	428	011
2	0,878	439	023	0,855−	427	024
3	1,317+	440	035	1,282	428	035
4	1,757	440	047	1,710−	428	047
5	2,197−	+0,440	−0,059	2,138−	+0,428	−0,059
6	2,637−	440	071	2,566	429	070
7	3,077+	441	082	2,995−	429	082
8	3,518+	442	094	3,424−	430	093
9	3,960	442	106	3,854−	430	105
10	4,402	+0,443	−0,118	4,284	+0,431	−0,117
11	4,845	444	130	4,715	432	128
12	5,289	444	142	5,147	433	140
13	5,733+	446	153	5,580−	433	152
14	6,179	447	166	6,013+	435	163
15	6,626−	+0,447	−0,178	6,448	+0,436	−0,175
16	7,073	449	189	6,884−	437	187
17	7,522	450	201	7,321−	438	199
18	7,972	451	213	7,759−	439	210
19	8,423+	453	225	8,198	441	222
20	8,876	+0,454	−0,237	8,639	+0,442	−0,234
21	9,330	456	249	9,081	444	245
22	9,786−	457	261	9,525	445	257
23	10,243	459	273	9,970+	447	269
24	10,702	461	285	10,417+	449	281
25	11,163−	+0,462	−0,297	10,866	+0,451	−0,293
26	11,625+	465	308	11,317−	452	305
27	12,090	466	321	11,769+	455	316
28	12,556+	469	332	12,224−	456	328
29	13,025	471	345	12,680+	459	340
30	13,496−	+0,473	−0,357	13,139	+0,461	−0,352
31	13,969	475	369	13,600	464	363
32	14,444+	478	380	14,064−	465	376
33	14,922	480	393	14,529+	469	387
34	15,402+	483	404	14,998−	471	400
35	15,885+	+0,486	−0,416	15,469−	+0,473	−0,412
36	16,371	488	429	15,942	476	423
37	16,859+	492	441	16,418+	480	435
38	17,351	494	453	16,898−	482	448
39	17,845	497	465	17,380	485	459
40	18,342+	+0,501	−0,477	17,865	+0,489	−0,471
41	18,843	504	489	18,354−	491	484
42	19,347−	507	502	18,845	495	495
43	19,854	510	514	19,340	499	507
44	20,364+	515	525	19,839−	501	520
45	20,879−	+0,517	−0,539	20,340+	+0,506	−0,531

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	$e = 0{,}36$			$e = 0{,}37$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
0°	$\bar{1}{,}80618$	+ 2	−684	$\bar{1}{,}79934$	+ 2	−695
1	80620−	5	684	79936	5	695
2	80625	9	684	79941+	9	695
3	80634−	12	684	79950	13	694
4	80646	16	683	79963−	16	695
5	$\bar{1}{,}80662$−	+ 19	−683	$\bar{1}{,}79979$−	+ 19	−694
6	80681	23	683	79998+	24	693
7	80704−	26	682	80022−	26	694
8	80730	30	682	80048+	31	692
9	80760−	33	681	80079−	34	692
10	$\bar{1}{,}80793$	+ 37	−680	$\bar{1}{,}80113$−	+ 37	−692
11	80830−	40	680	80150	41	691
12	80870	44	679	80191	45	690
13	80914−	47	678	80236−	48	689
14	80961	50	677	80284	52	688
15	$\bar{1}{,}81011$+	+ 55	−675	$\bar{1}{,}80336$−	+ 55	−687
16	81066−	57	675	80391	59	686
17	81123+	61	673	80450−	62	685
18	81184+	65	672	80512	66	684
19	81249	68	671	80578	69	682
20	$\bar{1}{,}81317$	+ 71	−670	$\bar{1}{,}80647$+	+ 73	−681
21	81388+	75	668	80720	77	679
22	81463+	79	666	80797−	80	678
23	81542−	81	665	80877−	83	677
24	81623+	86	663	80960	87	674
25	$\bar{1}{,}81709$−	+ 88	−662	$\bar{1}{,}81047$	+ 91	−673
26	81797+	92	659	81138−	94	671
27	81889+	96	657	81232−	97	669
28	81985	99	656	81329	101	667
29	82084	102	654	81430	105	665
30	$\bar{1}{,}82186$	+106	−651	$\bar{1}{,}81535$−	+108	−663
31	82292	109	649	81643−	111	661
32	82401	112	647	81754	115	659
33	82513+	116	644	81869−	118	656
34	82629+	119	642	81987	122	654
35	$\bar{1}{,}82748$+	+123	−639	$\bar{1}{,}82109$−	+125	−651
36	82871	126	637	82234	129	649
37	82997	129	634	82363−	132	646
38	83126	133	631	82495−	135	644
39	83259−	135	629	82630	139	640
40	$\bar{1}{,}83394$+	+140	−625	$\bar{1}{,}82769$−	+142	−638
41	83534−	142	623	82911	145	635
42	83676	146	620	83056+	149	631
43	83822−	149	617	83205	152	628
44	83971−	152	614	83357+	156	625
45	$\bar{1}{,}84123$	+155	−610	$\bar{1}{,}83513$	+159	−622

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	$e = 0{,}36$			$e = 0{,}37$		
v	M	D	D'	M	D	D'
45°	20°,879−	+0°,517	−0°,539	20°,340+	+0°,506	−0°,531
46	21,396+	522	550	20,846	509	544
47	21,918	525	563	21,355+	514	555
48	22,443+	530	574	21,869−	517	568
49	22,973−	533	587	22,386	521	580
50	23,506	+0,538	−0,599	22,907	+0,526	−0,592
51	24,044−	542	611	23,433−	529	605
52	24,586−	546	624	23,962+	534	616
53	25,132	551	636	24,496+	539	628
54	25,683	555	648	25,035	543	641
55	26,238+	+0,561	−0,660	25,578+	+0,548	−0,652
56	26,799−	565	673	26,126+	553	665
57	27,364	570	685	26,679+	558	677
58	27,934	575	697	27,237+	563	689
59	28,509+	581	709	27,800+	569	701
60	29,090−	+0,586	−0,721	28,369−	+0,574	−0,714
61	29,676−	591	733	28,943−	579	726
62	30,267	597	745	29,522−	585	738
63	30,864	603	757	30,107−	590	750
64	31,467	609	770	30,697+	597	762
65	32,076−	+0,614	−0,782	31,294	+0,603	−0,774
66	32,690+	621	793	31,897−	609	787
67	33,311+	628	805	32,506−	615	799
68	33,939−	634	818	33,121	622	811
69	34,573−	640	830	33,743−	628	823
70	35,213	+0,647	−0,842	34,371	+0,635	−0,834
71	35,860	654	854	35,006+	643	846
72	36,514	661	865	35,649−	649	859
73	37,175+	669	877	36,298	657	870
74	37,844−	675	889	36,955−	664	883
75	38,519+	+0,684	−0,900	37,619−	+0,671	−0,894
76	39,203	691	913	38,290+	680	905
77	39,894	699	924	38,970−	687	918
78	40,593−	707	936	39,657	695	929
79	41,300−	715	948	40,352+	704	940
80	42,015	+0,723	−0,959	41,056+	+0,712	−0,952
81	42,738+	732	970	41,768+	721	963
82	43,470+	741	981	42,489+	730	975
83	44,211	750	0,992	43,219	739	986
84	44,961	759	1,003	43,958−	748	0,998
85	45,720−	+0,768	−1,014	44,706−	+0,757	−1,009
86	46,488−	777	025	45,463−	767	020
87	47,265+	787	035	46,230−	776	031
88	48,052+	797	046	47,006+	787	041
89	48,849+	807	056	47,793−	796	052
90	49,656+	+0,817	−1,067	48,589+	+0,808	−1,062

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	$e = 0{,}36$			$e = 0{,}37$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}84123$	+155	−610	$\bar{1}{,}83513$	+159	−622
46	84278+	159	606	83672−	162	619
47	84437	162	603	83834	165	615
48	84599−	165	600	83999+	169	611
49	84764−	168	596	84168	172	608
50	$\bar{1}{,}84932$	+171	−592	$\bar{1}{,}84340$	+175	−604
51	85103	175	588	84515	179	600
52	85278−	177	584	84694−	181	597
53	85455+	181	580	84875	185	592
54	85636	184	576	85060	188	588
55	$\bar{1}{,}85820$−	+186	−572	$\bar{1}{,}85248$	+191	−584
56	86006+	190	567	85439	194	580
57	86196+	193	563	85633	197	575
58	86389	196	559	85830+	201	571
59	86585	199	554	86031	203	567
60	$\bar{1}{,}86784$−	+201	−550	$\bar{1}{,}86234$+	+207	−562
61	86985+	205	544	86441−	209	557
62	87190	208	540	86650+	213	552
63	87398−	210	535	86863−	215	548
64	87608	213	530	87078	218	542
65	$\bar{1}{,}87821$+	+216	−525	$\bar{1}{,}87296$+	+222	−537
66	88037+	219	519	87518−	224	533
67	88256	222	514	87742	227	527
68	88478−	224	509	87969	230	522
69	88702	227	503	88199−	232	517
70	$\bar{1}{,}88929$	+230	−498	$\bar{1}{,}88431$	+235	−511
71	89159−	232	493	88666+	238	505
72	89391	235	487	88904+	241	499
73	89626−	237	481	89145	244	493
74	89863	240	474	89389−	245	488
75	$\bar{1}{,}90103$	+242	−469	$\bar{1}{,}89634$+	+249	−481
76	90345+	245	462	89883	251	475
77	90590	247	456	90134	253	469
78	90837	250	450	90387+	256	462
79	91087−	251	444	90643+	259	456
80	$\bar{1}{,}91338$+	+254	−436	$\bar{1}{,}90902$−	+260	−450
81	91592+	257	430	91162+	263	443
82	91849−	258	424	91425+	266	436
83	92107	261	416	91691−	267	430
84	92368−	262	410	91958	270	423
85	$\bar{1}{,}92630$	+265	−402	$\bar{1}{,}92228$−	+271	−416
86	92895−	266	396	92499+	274	408
87	93161+	269	388	92773	276	401
88	93430−	270	381	93049	278	394
89	93700	272	373	93327−	279	387
90	$\bar{1}{,}93972$	+274	−366	$\bar{1}{,}93606$	+281	−379

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	$e = 0,36$			$e = 0,37$		
v	M	D	D'	M	D	D'
90°	49°,656+	+0°,817	−1°,067	48°,589+	+0°,808	−1°,062
91	50,473+	828	076	49,397−	817	073
92	51,301	838	087	50,214	829	083
93	52,139+	849	096	51,043−	839	093
94	52,988	860	106	51,882	850	103
95	53,848	+0,871	−1,116	52,732+	+0,862	−1,112
96	54,719+	883	125	53,594+	874	122
97	55,602−	894	134	54,468−	885	132
98	56,496	906	143	55,353	897	140
99	57,402−	918	152	56,250+	910	149
100	58,320−	+0,930	−1,160	57,160	+0,922	−1,158
101	59,250−	942	168	58,082	935	166
102	60,192	955	175	59,017−	947	175
103	61,147+	968	183	59,964	961	182
104	62,115	981	190	60,925−	974	190
105	63,096	+0,994	−1,197	61,899−	+0,987	−1,198
106	64,090+	1,008	204	62,886	1,001	204
107	65,098−	021	211	63,887+	016	211
108	66,119	035	216	64,903−	029	218
109	67,154	049	222	65,932	044	224
110	68,203	+1,063	−1,227	66,976−	+1,058	−1,230
111	69,266	078	232	68,034	073	235
112	70,344	092	237	69,107+	088	239
113	71,436	107	241	70,195+	104	244
114	72,543+	122	244	71,299	119	248
115	73,665+	+1,137	−1,247	72,418−	+1,134	−1,252
116	74,802−	153	250	73,552+	151	255
117	75,955	168	252	74,703−	166	258
118	77,123+	184	254	75,869	182	260
119	78,307	200	256	77,051+	199	261
120	79,507−	+1,215	−1,257	78,250+	+1,216	−1,263
121	80,722+	232	256	79,466	232	264
122	81,954+	249	256	80,698	249	264
123	83,203−	264	256	81,947+	266	263
124	84,467+	282	254	83,213+	284	262
125	85,749−	+1,298	−1,252	84,497	+1,301	−1,261
126	87,047−	314	249	85,798−	318	259
127	88,361+	332	245	87,116	336	255
128	89,693+	349	241	88,452−	353	252
129	91,042	366	237	89,805+	372	247
130	92,408+	+1,383	−1,231	91,177−	+1,389	−1,243
131	93,791+	401	225	92,566	407	237
132	95,192	418	219	93,973+	426	230
133	96,610	435	211	95,399	443	223
134	98,045	453	203	96,842+	462	215
135	99,498−	+1,470	−1,194	98,304	+1,480	−1,207

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	$e = 0{,}36$			$e = 0{,}37$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}93972$	+274	−366	$\bar{1}{,}93606$	+281	−379
91	94246 −	275	359	93887 +	284	371
92	94521	277	350	94171 −	284	364
93	94798	278	343	94455 +	287	356
94	95076 +	280	334	94742 −	288	348
95	$\bar{1}{,}95356$ +	+282	−326	$\bar{1}{,}95030$ −	+289	−340
96	95638 −	282	319	95319	291	332
97	95920 +	284	310	95610	292	324
98	96204 +	285	302	95902	294	315
99	96489 +	286	293	96196 −	294	307
100	$\bar{1}{,}96775$ +	+288	−285	$\bar{1}{,}96490$	+296	−298
101	97063 −	288	277	96786	297	290
102	97351 −	289	268	97083 −	297	282
103	97640 −	289	260	97380	299	272
104	97929	291	250	97679 −	299	264
105	$\bar{1}{,}98220$ −	+290	−242	$\bar{1}{,}97978$	+300	−255
106	98510 +	292	232	98278 −	300	246
107	98802	292	224	98578 +	301	236
108	99094 −	292	215	98879 +	302	227
109	99386	292	205	99181 −	301	218
110	$\bar{1}{,}99678$ +	+293	−196	$\bar{1}{,}99482$	+302	−208
111	$\bar{1}{,}99971$ −	292	187	$\bar{1}{,}99784$	302	199
112	0,00263	293	177	0,00086	302	190
113	00556 −	292	168	00388 −	301	181
114	00848 −	292	159	00689 +	302	170
115	0,01140 −	+291	−149	0,00991	+301	−161
116	01431	291	139	01292	301	151
117	01722	290	129	01593 −	300	142
118	02012 +	290	119	01893 −	299	132
119	02302	289	110	02192	298	122
120	0,02591 −	+287	−101	0,02490	+298	−111
121	02878	287	90	02788	296	102
122	03165 −	285	81	03084 +	296	91
123	03450	284	70	03380 −	293	82
124	03734	283	61	03673 +	293	71
125	0,04017 −	+280	− 51	0,03966	+291	− 62
126	04297 +	279	40	04257 −	289	52
127	04576 +	278	30	04546 −	287	42
128	04854 −	275	21	04833	285	32
129	05129	273	11	05118	283	21
130	0,05402	+271	− 1	0,05401	+281	− 11
131	05673	268	+ 9	05682 −	278	− 1
132	05941	266	19	05960	276	+ 9
133	06207	263	29	06236 −	273	19
134	06470 +	261	39	06509 −	270	29
135	0,06731 −	+257	+ 48	0,06779 −	+267	+ 39

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	e = 0,36			e = 0,37		
v	M	D	D'	M	D	D'
135°	99°,498 −	+1°,470	−1°,194	98°,304	+1°,480	−1°,207
136	100,968 −	487	184	99,784	498	197
137	102,455 +	505	173	101,282	516	187
138	103,960	522	162	102,798	535	176
139	105,482 +	540	149	104,333 −	552	164
140	107,022	+1,557	−1,137	105,885 +	+1,571	−1,152
141	108,579 −	574	123	107,456	589	139
142	110,153 −	591	108	109,045 −	606	124
143	111,744	608	093	110,651 +	625	108
144	113,352	625	076	112,276 −	642	093
145	114,977	+1,642	−1,059	113,918	+1,660	−1,076
146	116,619 −	658	041	115,578 −	677	058
147	118,277 −	674	022	117,255 −	694	039
148	119,951 +	691	1,002	118,949	711	1,019
149	121,642	706	0,982	120,660	728	0,998
150	123,348 +	+1,723	−0,960	122,388	+1,745	−0,977
151	125,071 −	737	938	124,133 −	760	955
152	126,808	753	915	125,893 +	777	931
153	128,561 −	767	891	127,670	792	907
154	130,328	782	866	129,462 +	808	882
155	132,110	+1,796	−0,840	131,270 −	+1,822	−0,856
156	133,906	810	814	133,092	837	829
157	135,716 −	823	787	134,929	851	802
158	137,539 −	836	759	136,780	865	774
159	139,375 −	848	730	138,645	878	745
160	141,223 +	+1,861	−0,700	140,523	+1,891	−0,715
161	143,084 −	872	670	142,414 −	903	683
162	144,956	883	639	144,317 −	914	652
163	146,839	894	608	146,231 +	926	619
164	148,733 −	904	576	148,157 +	937	587
165	150,637 −	+1,913	−0,543	150,094	+1,947	−0,554
166	152,550	922	509	152,041 −	956	520
167	154,472	931	475	153,997	965	485
168	156,403	938	441	155,962	973	450
169	158,341 +	946	406	157,935 +	982	414
170	160,287	+1,952	−0,370	159,917 −	+1,988	−0,379
171	162,239 +	959	334	161,905 −	1,994	342
172	164,198 +	963	299	163,899	2,000	305
173	166,161	968	262	165,899 +	005	267
174	168,129 +	973	225	167,904 +	010	229
175	170,102 −	+1,975	−0,188	169,914 −	+2,013	−0,192
176	172,077	978	150	171,927 −	015	154
177	174,055 +	981	113	173,942 +	018	115
178	176,036	982	076	175,960 +	020	077
179	178,018 −	982	038	177,980	020	039
180	180,000	+1,982	−0,000	180,000	+2,020	−0,000

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	$e = 0{,}36$			$e = 0{,}37$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,06731 −	+257	+ 48	0,06779 −	+267	+ 39
136	06988	254	58	07046 −	264	49
137	07242	251	68	07310 −	260	58
138	07493	248	77	07570	257	69
139	07741 −	244	86	07827 +	254	78
140	0,07985 −	+240	+ 96	0,08081 −	+249	+ 87
141	08225	236	105	08330 +	246	98
142	08461 +	233	115	08576	242	107
143	08694	228	124	08818 −	237	116
144	08922 +	225	133	09055	233	125
145	0,09147 −	+219	+141	0,09288 +	+229	+135
146	09366 +	215	151	09517 −	223	143
147	09581 +	211	159	09740 −	220	153
148	09792	206	168	09960 −	214	161
149	09998 −	200	176	10174 −	209	169
150	0,10198 +	+196	+185	0,10383 −	+203	+178
151	10394	191	192	10586 +	199	187
152	10585 −	185	200	10785 −	192	194
153	10770 −	179	207	10977 +	187	203
154	10949 +	174	215	11164 +	182	210
155	0,11123 +	+169	+223	0,11346 −	+175	+217
156	11292 −	162	229	11521	169	225
157	11454	157	236	11690 +	163	232
158	11611 −	150	242	11853 +	157	239
159	11761	144	249	12010	150	245
160	0,11905	+138	+255	0,12160 +	+144	+252
161	12043	131	261	12304 +	137	257
162	12174 +	125	267	12441 +	131	263
163	12299 +	119	273	12572 −	123	268
164	12418 −	111	277	12695	117	274
165	0,12529 +	+105	+283	0,12812 −	+109	+278
166	12634 +	98	287	12921	102	283
167	12732 +	91	291	13023 +	95	288
168	12823 +	84	295	13118 +	88	292
169	12907 +	77	299	13206	80	296
170	0,12984 +	+ 70	+302	0,13286 +	+ 73	+299
171	13054	63	305	13359	66	302
172	13117	55	308	13425 −	57	305
173	13172	48	310	13482 +	51	308
174	13220 +	41	313	13533 −	42	309
175	0,13261	+ 33	+314	0,13575	+ 35	+312
176	13294 +	26	316	13610	27	313
177	13320 +	19	317	13637	20	314
178	13339	11	318	13657 −	11	315
179	13350	+ 4	318	13668	+ 4	316
180	0,13354	− 4	+318	0,13672	− 4	+316

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	$e = 0{,}38$			$e = 0{,}39$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+0,416	−0,000	0,000	+0,404	−0,000
1	0,416−	415	012	0,404	404	011
2	0,831+	416	023	0,808+	405	022
3	1,247	416	034	1,213−	404	034
4	1,663	416	046	1,617	405	045
5	2,079+	+0,417	−0,057	2,022	+0,405	−0,057
6	2,496	417	069	2,427	406	068
7	2,913	418	080	2,833−	405	080
8	3,331−	418	093	3,238−	407	090
9	3,749−	418	104	3,645+	408	102
10	4,167+	+0,420	−0,114	4,053−	+0,407	−0,114
11	4,587	420	127	4,460+	409	124
12	5,007	421	138	4,869	410	136
13	5,428	422	149	5,279−	410	148
14	5,850	423	161	5,689	412	158
15	6,273	+0,424	−0,172	6,101−	+0,412	−0,170
16	6,697	425	184	6,513	414	181
17	7,122+	427	195	6,927−	414	193
18	7,549−	427	208	7,341+	417	204
19	7,976+	429	218	7,758−	417	216
20	8,405+	+0,431	−0,230	8,175	+0,419	−0,227
21	8,836−	432	242	8,594	420	239
22	9,268−	433	254	9,014	422	250
23	9,701+	435	265	9,436	424	261
24	10,136+	437	276	9,860−	425	274
25	10,573+	+0,439	−0,288	10,285	+0,427	−0,284
26	11,012+	441	300	10,712	429	296
27	11,453	443	312	11,141	431	307
28	11,896−	444	324	11,572	433	319
29	12,340+	447	335	12,005+	435	330
30	12,787+	+0,450	−0,347	12,440+	+0,438	−0,342
31	13,237−	451	359	12,878−	440	354
32	13,688	454	370	13,318−	442	366
33	14,142	456	382	13,760−	444	378
34	14,598+	459	394	14,204	447	389
35	15,057	+0,462	−0,406	14,651+	+0,450	−0,400
36	15,519	464	418	15,101	453	412
37	15,983	467	429	15,554−	455	424
38	16,450+	471	441	16,009	458	436
39	16,921−	473	454	16,467+	462	447
40	17,394	+0,476	−0,465	16,929−	+0,464	−0,460
41	17,870	480	477	17,393	468	471
42	18,350−	483	489	17,861−	471	483
43	18,833−	486	501	18,332−	474	495
44	19,319	490	513	18,806	478	506
45	19,809	+0,493	−0,525	19,284	+0,482	−0,518

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	$e = 0{,}38$			$e = 0{,}39$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
0°	$\bar{1}{,}79239$	+ 2	−706	$\bar{1}{,}78533$	+ 2	−718
1	79241	5	706	78535	5	718
2	79246+	10	706	78540+	10	717
3	79256−	12	706	78550−	13	718
4	79268+	17	705	78563−	16	718
5	$\bar{1}{,}79285$−	+ 20	−706	$\bar{1}{,}78579$	+ 21	−717
6	79305−	23	705	78600−	24	717
7	79328+	28	704	78624	28	716
8	79356−	31	704	78652−	31	716
9	79387−	34	704	78683+	36	715
10	$\bar{1}{,}79421$+	+ 38	−702	$\bar{1}{,}78719$−	+ 38	−715
11	79459+	42	702	78757+	43	713
12	79501+	46	701	78800	46	713
13	79547−	49	701	78846	50	712
14	79596	53	700	78896+	54	711
15	$\bar{1}{,}79649$−	+ 56	−699	$\bar{1}{,}78950$+	+ 58	−710
16	79705	60	697	79008−	61	710
17	79765	63	696	79069−	65	708
18	79828	68	694	79134−	68	707
19	79896−	70	694	79202	72	706
20	$\bar{1}{,}79966$+	+ 75	−692	$\bar{1}{,}79274$	+ 76	−704
21	80041	78	691	79350	79	703
22	80119	81	690	79429+	84	701
23	80200+	86	687	79513−	86	700
24	80286−	88	687	79599+	91	698
25	$\bar{1}{,}80374$+	+ 93	−684	$\bar{1}{,}79690$	+ 94	−696
26	80467−	96	683	79784	98	695
27	80563−	99	681	79882	101	693
28	80662	103	679	79983+	105	691
29	80765	107	677	80088+	109	689
30	$\bar{1}{,}80872$−	+110	−675	$\bar{1}{,}80197$	+112	−687
31	80982−	113	673	80309+	116	684
32	81095+	118	670	80425	120	682
33	81213−	120	668	80545−	123	680
34	81333+	125	665	80668	127	678
35	$\bar{1}{,}81458$−	+127	−663	$\bar{1}{,}80795$−	+130	−676
36	81585+	132	660	80925	134	673
37	81717−	134	658	81059−	137	670
38	81851+	139	655	81196	141	667
39	81990−	141	653	81337	145	665
40	$\bar{1}{,}82131$	+145	−649	$\bar{1}{,}81482$−	+148	−662
41	82276+	149	646	81630−	151	659
42	82425	152	644	81781+	155	656
43	82577	155	641	81936+	159	653
44	82732+	159	637	82095	162	650
45	$\bar{1}{,}82891$	+162	−634	$\bar{1}{,}82257$	+166	−646

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	e = 0,38			e = 0,39		
v	M	D	D'	M	D	D'
45°	19,809	+0,493	−0,525	19,284	+0,482	−0,518
46	20,302+	498	536	19,766−	485	531
47	20,800−	501	549	20,251	489	542
48	21,301	505	561	20,740	493	554
49	21,806	509	573	21,233	497	566
50	22,315	+0,513	−0,585	21,730	+0,501	−0,578
51	22,828+	518	597	22,231+	506	590
52	23,346	522	609	22,737−	510	602
53	23,868	526	621	23,247−	514	614
54	24,394+	532	633	23,761	519	626
55	24,926−	+0,535	−0,646	24,280	+0,524	−0,638
56	25,461+	541	657	24,804	529	650
57	26,002+	546	669	25,333−	533	663
58	26,548	551	682	25,866+	539	674
59	27,099	556	694	26,405	544	686
60	27,655	+0,562	−0,706	26,949	+0,550	−0,698
61	28,217−	567	718	27,499−	555	711
62	28,784	573	730	28,054−	560	723
63	29,357−	578	743	28,614+	567	735
64	29,935+	585	754	29,181−	572	747
65	30,520−	+0,590	−0,767	29,753	+0,579	−0,759
66	31,110+	597	778	30,332−	584	772
67	31,707+	603	791	30,916+	591	783
68	32,310+	610	803	31,507−	598	795
69	32,920+	617	815	32,105+	605	807
70	33,537−	+0,623	−0,827	32,710−	+0,611	−0,820
71	34,160	630	839	33,321	618	832
72	34,790+	638	851	33,939	626	844
73	35,428−	644	863	34,565−	632	856
74	36,072+	653	875	35,197+	641	867
75	36,725−	+0,660	−0,887	35,838−	+0,648	−0,880
76	37,385−	667	899	36,486	656	892
77	38,052+	676	910	37,142−	664	904
78	38,728	684	922	37,806−	672	916
79	39,412	692	934	38,478	680	927
80	40,104	+0,701	−0,946	39,158+	+0,690	−0,939
81	40,805	709	957	39,848−	698	951
82	41,514+	719	968	40,546−	707	963
83	42,233−	727	980	41,253−	716	974
84	42,960+	737	0,991	41,969−	725	986
85	43,697	+0,746	−1,003	42,694	+0,735	−0,997
86	44,443+	756	014	43,429+	745	1,008
87	45,199	766	025	44,174	755	019
88	45,965	776	036	44,929	765	031
89	46,741	786	047	45,694	776	042
90	47,527	+0,797	−1,057	46,470−	+0,786	−1,053

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	$e = 0{,}38$			$e = 0{,}39$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}82891$	+162	−634	$\bar{1}{,}82257$	+166	−646
46	83053+	166	630	82423−	169	644
47	83219	169	627	82592−	172	640
48	83388	172	624	82764+	176	636
49	83560+	176	620	82940+	180	633
50	$\bar{1}{,}83736$	+179	−616	$\bar{1}{,}83120-$	+182	−630
51	83915	182	613	83302+	187	625
52	84097+	186	608	83489−	189	622
53	84283	189	605	83678	193	618
54	84472−	192	601	83871	196	614
55	$\bar{1}{,}84664$	+195	−597	$\bar{1}{,}84067$	+200	−609
56	84859	199	592	84267−	203	606
57	85058−	201	588	84470−	206	602
58	85259+	205	583	84676−	209	597
59	85464+	208	579	84885	213	592
60	$\bar{1}{,}85672+$	+212	−574	$\bar{1}{,}85098-$	+216	−588
61	85884−	214	570	85314−	219	584
62	86098	217	565	85533−	222	579
63	86315	221	560	85755−	225	574
64	86536−	223	556	85980	229	569
65	$\bar{1}{,}86759$	+226	−550	$\bar{1}{,}86209-$	+231	−564
66	86985+	230	545	86440	235	559
67	87215	232	540	86675−	237	554
68	87447	235	535	86912+	241	548
69	87682+	238	529	87153	244	543
70	$\bar{1}{,}87920+$	+241	−523	$\bar{1}{,}87397-$	+246	−538
71	88161+	244	518	87643	250	532
72	88405	247	512	87893−	252	527
73	88652−	249	507	88145	255	520
74	88901	252	501	88400	258	514
75	$\bar{1}{,}89153$	+255	−495	$\bar{1}{,}88658$	+261	−508
76	89408−	257	489	88919	263	503
77	89665	260	483	89182+	266	496
78	89925−	262	477	89448+	269	490
79	90187	265	470	89717+	272	483
80	$\bar{1}{,}90452$	+267	−463	$\bar{1}{,}89989-$	+274	−478
81	90719+	270	456	90263−	276	471
82	90989	272	450	90539	279	464
83	91261	274	443	90818	281	457
84	91535+	277	436	91099	284	450
85	$\bar{1}{,}91812$	+279	−429	$\bar{1}{,}91383$	+286	−443
86	92091	281	422	91669−	288	436
87	92372	283	415	91957	290	429
88	92655	285	408	92247+	293	421
89	92940	287	400	92540	294	414
90	$\bar{1}{,}93227$	+289	−393	$\bar{1}{,}92834+$	+297	−406

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	$e = 0,38$			$e = 0,39$		
v	M	D	D'	M	D	D'
90°	47°,527	+0°,797	−1°,057	46°,470−	+0°,786	−1°,053
91	48,324	807	068	47,256−	797	064
92	49,131+	819	078	48,053−	808	075
93	49,950−	829	089	48,861−	819	085
94	50,779	841	099	49,680	831	095
95	51,620	+0,852	−1,109	50,511	+0,842	−1,106
96	52,472+	864	119	51,353+	855	115
97	53,336+	877	128	52,208	867	126
98	54,213−	888	138	53,075−	879	136
99	55,101	901	147	53,954	892	145
100	56,002	+0,914	−1,156	54,846	+0,905	−1,154
101	56,916−	926	165	55,751−	918	164
102	57,842	940	173	56,669−	931	172
103	58,782	953	182	57,600	945	181
104	59,735−	966	190	58,545	959	189
105	60,701	+0,981	−1,197	59,504	+0,973	−1,197
106	61,682−	0,994	205	60,477	0,987	205
107	62,676+	1,009	212	61,464+	1,002	212
108	63,685	023	219	62,466+	017	220
109	64,708+	038	225	63,483	032	227
110	65,746+	+1,053	−1,231	64,515	+1,047	−1,233
111	66,799+	069	237	65,562+	063	239
112	67,868−	083	243	66,625+	079	245
113	68,951+	100	247	67,704	095	250
114	70,051−	115	252	68,799	111	256
115	71,166	+1,131	−1,256	69,910	+1,127	−1,260
116	72,297+	148	260	71,037−	145	264
117	73,445	164	263	72,182	161	268
118	74,609	181	266	73,343+	179	271
119	75,790−	197	268	74,522	196	274
120	76,987+	+1,215	−1,269	75,718	+1,214	−1,276
121	78,202+	232	270	76,932−	231	278
122	79,434+	250	271	78,163+	250	278
123	80,684	267	271	79,413	268	279
124	81,951+	285	270	80,681−	286	279
125	83,236+	+1,303	−1,269	81,967	+1,305	−1,278
126	84,539+	322	267	83,272	324	277
127	85,861−	339	265	84,596−	342	275
128	87,200	358	262	85,938	362	272
129	88,558	376	258	87,300−	381	269
130	89,934+	+1,395	−1,253	88,681−	+1,400	−1,265
131	91,329+	414	248	90,081	420	260
132	92,743	433	242	91,501−	439	255
133	94,176−	451	236	92,940	459	248
134	95,627	470	228	94,399	479	241
135	97,097+	+1,490	−1,219	95,878−	+1,498	−1,233

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	$e = 0{,}38$			$e = 0{,}39$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}93227$	+289	−393	$\bar{1}{,}92834+$	+297	−406
91	93516	291	385	93131	299	399
92	93807	292	377	93430−	300	392
93	94099+	295	369	93730	302	383
94	94394	296	362	94032+	304	375
95	$\bar{1}{,}94690-$	+297	−354	$\bar{1}{,}94336+$	+306	−367
96	94987+	299	345	94642	307	359
97	95286+	301	337	94949+	309	351
98	95587	302	329	95258	310	342
99	95889−	303	321	95568+	312	334
100	$\bar{1}{,}96192-$	+304	−312	$\bar{1}{,}95880$	+313	−326
101	96496	305	303	96193	314	317
102	96801+	307	294	96507	315	308
103	97108	307	286	96822	316	299
104	97415	308	277	97138+	318	290
105	$\bar{1}{,}97723+$	+309	−267	$\bar{1}{,}97456-$	+318	−282
106	98032+	310	258	97774−	318	273
107	98342	310	250	98092+	320	263
108	98652	311	240	98412−	320	254
109	98963−	311	231	98732−	320	245
110	$\bar{1}{,}99274-$	+311	−222	$\bar{1}{,}99052$	+321	−235
111	99585−	311	212	99373−	321	226
112	$\bar{1}{,}99896$	311	202	$\bar{1}{,}99694-$	321	216
113	0,00207+	312	192	0,00015−	321	206
114	00519	311	183	00336−	321	196
115	0,00830	+311	−173	0,00657−	+320	−187
116	01141−	310	164	00977	320	176
117	01451	310	154	01297+	320	166
118	01761	309	144	01617+	319	156
119	02070+	309	134	01936+	319	146
120	0,02379−	+307	−124	0,02255	+317	−136
121	02686	307	114	02572+	317	125
122	02993−	305	104	02889	315	115
123	03298−	304	94	03204+	315	105
124	03602−	302	83	03519−	312	95
125	0,03904	+301	− 73	0,03831+	+311	− 84
126	04205	299	63	04142+	310	74
127	04504	297	52	04452−	307	64
128	04801+	296	42	04759+	306	53
129	05097−	293	32	05065−	303	43
130	0,05390	+291	− 22	0,05368	+301	− 32
131	05681−	288	12	05669	299	22
132	05969	286	− 1	05968−	296	12
133	06255−	283	+ 9	06264−	293	− 1
134	06538−	280	19	06557−	290	+ 9
135	0,06818−	+277	+ 29	0,06847	+287	+ 19

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	$e = 0{,}38$			$e = 0{,}39$		
v	M	D	D'	M	D	D'
135°	97°,097+	+1°,490	−1°,219	95°,878−	+1°,498	−1°,233
136	98,587−	508	211	97,376	518	224
137	100,095	527	201	98,894+	538	214
138	101,622+	547	190	100,432+	558	204
139	103,169−	564	179	101,990+	578	192
140	104,733	+1,584	−1,165	103,568+	+1,598	−1,180
141	106,317+	604	151	105,166	617	168
142	107,921−	622	138	106,783+	637	153
143	109,543−	640	123	108,420+	657	138
144	111,183	659	106	110,077	676	123
145	112,842+	+1,678	−1,089	111,753+	+1,696	−1,106
146	114,520	696	071	113,449−	714	089
147	116,216	714	053	115,163+	734	069
148	117,930	732	033	116,897	753	050
149	119,662	749	1,012	118,650−	771	030
150	121,411+	+1,767	−0,990	120,421−	+1,789	−1,008
151	123,178+	784	968	122,210	807	0,986
152	124,962+	801	945	124,017+	825	962
153	126,763	817	921	125,842+	843	937
154	128,580+	834	895	127,685−	859	913
155	130,414−	+1,849	−0,870	129,544	+1,876	−0,886
156	132,263−	864	843	131,420	892	859
157	134,127	879	815	133,312+	908	831
158	136,006−	894	786	135,220+	924	802
159	137,900+	908	756	137,144−	938	773
160	139,808+	+1,923	−0,726	139,082	+1,952	−0,742
161	141,731−	934	697	141,034+	966	710
162	143,665	947	665	143,000+	980	678
163	145,612−	958	632	144,980−	1,992	645
164	147,570+	970	598	146,972−	2,004	611
165	149,540+	+1,981	−0,564	148,976−	+2,015	−0,577
166	151,521	1,991	530	150,991	026	541
167	153,512	2,000	495	153,017	036	506
168	155,512+	009	459	155,053	045	469
169	157,521+	017	423	157,098+	054	432
170	159,538+	+2,025	−0,386	159,152+	+2,062	−0,394
171	161,563	031	349	161,214+	069	356
172	163,594+	038	311	163,283+	076	318
173	165,632	043	273	165,359−	081	279
174	167,675−	047	235	167,440	086	240
175	169,722−	+2,051	−0,196	169,526−	+2,090	−0,201
176	171,773	054	157	171,616−	093	161
177	173,827	056	118	173,709	096	121
178	175,883+	058	078	175,805−	097	081
179	177,941+	059	039	177,902	098	040
180	180,000	+2,059	−0,000	180,000	+2,098	−0,000

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	$e = 0{,}38$			$e = 0{,}39$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,06818 −	+277	+ 29	0,06847	+287	+ 19
136	07095 −	273	39	07134	284	30
137	07368 +	271	50	07418 −	280	40
138	07639 −	266	59	07698	277	50
139	07905 +	263	70	07975 −	273	60
140	0,08168 +	+260	+ 80	0,08248 −	+269	+ 70
141	08428 −	255	89	08517 −	264	80
142	08683	251	98	08781 +	261	91
143	08934	246	108	09042	256	100
144	09180 +	243	118	09298	252	110
145	0,09423 −	+237	+127	0,09550 −	+246	+119
146	09660 +	233	136	09796 +	242	129
147	09893	228	145	10038 +	237	138
148	10121 −	222	154	10275	231	147
149	10343 +	218	163	10506 +	226	157
150	0,10561 −	+212	+171	0,10732 +	+221	+165
151	10773 −	206	180	10953 −	214	173
152	10979	201	188	11167 +	209	183
153	11180 −	194	196	11376	203	190
154	11374 +	189	205	11579 −	196	198
155	0,11563	+183	+212	0,11775	+190	+206
156	11746 −	176	219	11965	183	214
157	11922	170	226	12148 +	177	222
158	12092 −	163	233	12325 +	170	229
159	12255	157	240	12495 +	163	236
160	0,12412 −	+149	+246	0,12658 +	+156	+243
161	12561 +	143	253	12814 +	149	249
162	12704 +	136	259	12963 +	142	255
163	12840	129	265	13105	134	261
164	12969	121	270	13239	127	266
165	0,13090 +	+114	+276	0,13366 −	+118	+271
166	13204 +	107	280	13484 +	112	277
167	13311	99	285	13596 −	103	281
168	13410	92	289	13699	95	286
169	13502 −	83	292	13794 +	88	290
170	0,13585 +	+ 76	+297	0,13882 −	+ 79	+293
171	13661 +	69	300	13961	71	298
172	13730 −	60	302	14032	63	300
173	13790	52	305	14095	55	303
174	13842 +	45	308	14150 −	46	304
175	0,13887 −	+ 36	+309	0,14196	+ 38	+307
176	13923	28	311	14234	29	308
177	13951 +	21	312	14263 +	22	310
178	13972 −	12	313	14285 −	12	310
179	13984	+ 4	313	14297 +	+ 4	311
180	0,13988	− 4	+313	0,14301 +	− 4	+312

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	$e = 0{,}40$			$e = 0{,}41$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+0,393	−0,000	0,000	+0,382	−0,000
1	0,393	393	011	0,382−	381	011
2	0,786−	393	023	0,763+	382	022
3	1,179−	393	034	1,145+	382	033
4	1,572	393	045	1,527+	383	044
5	1,965+	+0,394	−0,055	1,910−	+0,382	−0,055
6	2,359+	394	067	2,292+	383	066
7	2,753+	395	078	2,675+	384	076
8	3,148	395	089	3,059	384	088
9	3,543+	396	100	3,443	385	099
10	3,939+	+0,397	−0,111	3,828	+0,385	−0,110
11	4,336	397	123	4,213+	386	121
12	4,733+	398	134	4,599+	387	132
13	5,131+	400	145	4,986+	388	143
14	5,531−	400	157	5,374+	389	154
15	5,931−	+0,401	−0,168	5,763	+0,390	−0,165
16	6,332−	402	179	6,153	391	176
17	6,734	403	190	6,544	392	187
18	7,137+	405	201	6,936	393	198
19	7,542	406	213	7,329+	395	209
20	7,948	+0,407	−0,224	7,724	+0,396	−0,220
21	8,355+	409	235	8,120+	398	231
22	8,764	411	246	8,518	399	243
23	9,175−	411	258	8,917	400	254
24	9,586−	415	269	9,317−	403	265
25	10,001−	+0,415	−0,281	9,720	+0,404	−0,276
26	10,416	418	292	10,124+	406	288
27	10,834−	419	304	10,530+	408	298
28	11,253	422	315	10,938+	411	310
29	11,675−	423	326	11,349−	412	322
30	12,098	+0,426	−0,337	11,761−	+0,414	−0,333
31	12,524	428	349	12,175	417	344
32	12,952	430	360	12,592−	419	356
33	13,382+	433	371	13,011−	421	367
34	13,815+	436	383	13,432	424	378
35	14,251	+0,438	−0,395	13,856	+0,426	−0,390
36	14,689	441	407	14,282+	430	401
37	15,130−	443	418	14,712−	432	413
38	15,573+	447	429	15,144−	434	425
39	16,020	449	442	15,578+	438	435
40	16,469+	+0,453	−0,453	16,016+	+0,441	−0,447
41	16,922	456	465	16,457+	444	458
42	17,378	459	477	16,901+	448	470
43	17,837	463	488	17,349	451	482
44	18,300−	466	500	17,800−	454	494
45	18,766−	+0,469	−0,512	18,254	+0,458	−0,505

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	$e = 0{,}40$			$e = 0{,}41$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
0°	$\bar{1}{,}77815$	+ 2	−730	$\bar{1}{,}77085+$	+ 2	−742
1	77817	6	730	77087	6	742
2	77823−	9	730	77093	10	742
3	77832	13	729	77103−	13	743
4	77845+	17	729	77116	17	742
5	$\bar{1}{,}77862+$	+ 21	−729	$\bar{1}{,}77133+$	+ 21	−741
6	77883	25	729	77154+	25	741
7	77908−	28	729	77179+	29	740
8	77936	32	728	77208+	33	740
9	77968	36	727	77241	36	740
10	$\bar{1}{,}78004$	+ 40	−727	$\bar{1}{,}77277+$	+ 41	−739
11	78044−	43	726	77318	44	739
12	78087	47	725	77362	48	738
13	78134+	51	724	77410	52	737
14	78185+	55	723	77462	56	736
15	$\bar{1}{,}78240$	+ 58	−722	$\bar{1}{,}77518-$	+ 59	−735
16	78298+	63	721	77577	64	734
17	78361−	66	720	77641	67	733
18	78427−	69	719	77708−	71	732
19	78496+	74	717	77779−	75	731
20	$\bar{1}{,}78570$	+ 77	−716	$\bar{1}{,}77854-$	+ 78	−730
21	78647+	81	715	77932	83	728
22	78728+	85	713	78015−	86	727
23	78813	88	712	78101	90	725
24	78901+	93	710	78191	94	723
25	$\bar{1}{,}78994-$	+ 95	−709	$\bar{1}{,}78285$	+ 97	−722
26	79089+	100	707	78382+	102	719
27	79189	103	705	78484	105	718
28	79292+	107	703	78589	109	716
29	79399+	111	701	78698	113	714
30	$\bar{1}{,}79510$	+115	−699	$\bar{1}{,}78811$	+116	−712
31	79625−	118	698	78927+	121	710
32	79743−	122	695	79048−	124	708
33	79865−	125	693	79172	128	706
34	79990	129	690	79300−	131	704
35	$\bar{1}{,}80119+$	+133	−688	$\bar{1}{,}79431+$	+136	−701
36	80252	137	685	79567−	139	699
37	80389−	140	683	79706−	142	696
38	80529−	143	681	79848+	147	693
39	80672+	148	677	79995	150	691
40	$\bar{1}{,}80820-$	+151	−675	$\bar{1}{,}80145$	+154	−688
41	80971−	154	672	80299	157	685
42	81125+	158	669	80456+	162	682
43	81283+	162	665	80618−	165	680
44	81445+	166	662	80783−	168	677
45	$\bar{1}{,}81611-$	+168	−660	$\bar{1}{,}80951$	+172	−673

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	$e = 0{,}40$			$e = 0{,}41$		
v	M	D	D'	M	D	D'
45°	18°,766 −	+0°,469	−0°,512	18°,254	+0°,458	−0°,505
46	19,235 +	474	523	18,712 −	461	517
47	19,709 −	477	536	19,173 +	466	529
48	20,186 −	481	547	19,639 −	469	541
49	20,667	485	559	20,108 −	473	553
50	21,152	+0,489	−0,571	20,581	+0,477	−0,564
51	21,641 +	494	583	21,058 +	482	576
52	22,135 −	498	595	21,540	486	588
53	22,633 −	502	607	22,026 −	490	600
54	23,135	507	619	22,516	495	611
55	23,642	+0,512	−0,631	23,011	+0,500	−0,623
56	24,154 −	516	643	23,511	504	636
57	24,670 +	522	655	24,015 +	510	647
58	25,192	527	667	24,525	515	659
59	25,719 −	532	679	25,040 −	520	672
60	26,251 −	+0,537	−0,691	25,560 −	+0,525	−0,684
61	26,788	543	703	26,085	531	696
62	27,331 −	548	715	26,616 −	536	708
63	27,879 +	555	727	27,152	542	720
64	28,434 −	560	740	27,694 +	548	732
65	28,994	+0,566	−0,752	28,242 +	+0,555	−0,743
66	29,560 +	573	763	28,797 −	560	756
67	30,133	579	776	29,357 +	567	768
68	30,712	586	788	29,924	574	780
69	31,298 −	592	800	30,498 −	580	793
70	31,890	+0,599	−0,812	31,078	+0,587	−0,805
71	32,489	606	824	31,665	594	817
72	33,095 +	614	836	32,259	601	829
73	33,709	621	849	32,860 +	609	841
74	34,330 −	628	861	33,469	616	853
75	34,958	+0,636	−0,873	34,085 +	+0,625	−0,865
76	35,594	644	884	34,710 −	632	878
77	36,238	652	896	35,342 −	640	890
78	36,890	661	908	35,982 −	648	902
79	37,551 −	668	921	36,630	657	913
80	38,219 +	+0,678	−0,932	37,287	+0,666	−0,926
81	38,897	686	944	37,953 −	674	938
82	39,583	696	956	38,627	684	949
83	40,279 −	704	968	39,311	693	961
84	40,983	714	979	40,004 −	702	973
85	41,697 +	+0,724	−0,991	40,706 +	+0,712	−0,985
86	42,421	734	1,003	41,418 +	723	0,996
87	43,155 −	743	014	42,141 −	732	1,009
88	43,898 +	754	025	42,873	743	020
89	44,652 +	765	036	43,616 −	753	031
90	45,417	+0,775	−1,048	44,369	+0,764	−1,042

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	$e = 0{,}40$			$e = 0{,}41$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}81611-$	+168	−660	$\bar{1}{,}80951$	+172	−673
46	81779+	173	656	81123+	176	669
47	81952	176	653	81299	179	666
48	82128	179	650	81478+	183	662
49	82307+	183	646	81661+	187	659
50	$\bar{1}{,}82490+$	+187	−642	$\bar{1}{,}81848$	+190	−656
51	82677	190	639	82038+	194	652
52	82867	193	635	82232	197	648
53	83060+	197	631	82429+	201	644
54	83257+	201	627	82630+	205	640
55	$\bar{1}{,}83458-$	+203	−623	$1{,}82835-$	+207	−637
56	83661+	207	619	83042+	212	632
57	83868+	211	614	83254−	215	629
58	84079	214	610	83469−	218	625
59	84293−	217	606	83687−	221	620
60	$\bar{1}{,}84510$	+220	−602	$\bar{1}{,}83908+$	+225	−615
61	84730+	224	597	84133+	229	610
62	84954	227	592	84362	232	606
63	85181	230	587	84594−	235	602
64	85411+	234	582	84829−	238	597
65	$\bar{1}{,}85645-$	+236	−578	$\bar{1}{,}85067+$	+242	−591
66	85881+	240	572	85309	245	587
67	86121	243	567	85554	248	582
68	86364	246	562	85802	251	576
69	86610	249	557	86053+	255	571
70	$\bar{1}{,}86859+$	+252	−551	$\bar{1}{,}86308$	+258	−566
71	87111+	255	545	86566−	260	560
72	87366+	259	540	86826+	264	554
73	87625−	261	535	87090+	267	548
74	87886−	264	529	87357	270	543
75	$\bar{1}{,}88150-$	+266	−523	$\bar{1}{,}87627$	+273	−537
76	88416+	270	516	87900	276	531
77	88686	272	510	88176−	278	525
78	88958+	276	504	88454+	282	518
79	89234−	277	498	88736	284	512
80	$\bar{1}{,}89511+$	+281	−491	$\bar{1}{,}89020+$	+287	−506
81	89792	283	485	89307+	290	499
82	90075	286	478	89597	293	493
83	90361	288	471	89890−	295	486
84	90649	291	464	90185−	297	479
85	$\bar{1}{,}90940-$	+293	−458	$\bar{1}{,}90482+$	+300	−472
86	91233−	295	451	90782+	303	465
87	91528	298	443	91085	305	458
88	91826	300	436	91390	307	450
89	92126	302	429	91697+	310	443
90	$\bar{1}{,}92428$	+304	−421	$\bar{1}{,}92007$	+312	−435

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	e = 0,40			e = 0,41		
v	M	D	D'	M	D	D'
90°	45°,417	+0°,775	−1°,048	44°,369	+0°,764	−1°,042
91	46,192	786	059	45,133+	776	053
92	46,978+	798	069	45,909−	786	065
93	47,776	809	081	46,695+	799	076
94	48,585−	820	091	47,494−	810	087
95	49,405+	+0,833	−1,101	48,304−	+0,822	−1,098
96	50,238	844	112	49,126−	834	109
97	51,082+	857	122	49,960	847	119
98	51,939−	870	132	50,807	860	129
99	52,809+	883	142	51,667	873	139
100	53,692−	+0,895	−1,152	52,540	+0,886	−1,150
101	54,587+	910	161	53,426	900	159
102	55,497−	922	171	54,326	914	169
103	56,419+	937	179	55,240	928	178
104	57,356	951	188	56,168−	942	188
105	58,307−	+0,965	−1,197	57,110	+0,957	−1,196
106	59,272	980	205	58,067	972	205
107	60,252	0,994	213	59,039	0,987	213
108	61,246−	1,010	220	60,026	1,003	221
109	62,256−	026	227	61,029	018	229
110	63,282	+1,041	−1,235	62,047+	+1,035	−1,236
111	64,323+	057	241	63,082	051	243
112	65,380+	074	247	64,133−	067	250
113	66,454−	089	254	65,200	085	256
114	67,543+	107	258	66,285−	101	263
115	68,650	+1,123	−1,264	67,386	+1,119	−1,268
116	69,773+	141	268	68,505	137	273
117	70,914+	158	272	69,642−	154	278
118	72,072+	176	276	70,796	173	282
119	73,248+	194	279	71,969	191	286
120	74,442+	+1,212	−1,282	73,160	+1,210	−1,289
121	75,654+	231	284	74,370	229	291
122	76,885−	249	286	75,599	248	293
123	78,134	268	287	76,847	267	295
124	79,402−	287	288	78,114+	287	295
125	80,689−	+1,306	−1,288	79,401−	+1,308	−1,295
126	81,995	326	286	80,709−	327	296
127	83,321−	345	285	82,036	347	295
128	84,666	365	283	83,383+	368	293
129	86,031	385	280	84,751+	389	290
130	87,416	+1,405	−1,276	86,140	+1,409	−1,287
131	88,821	425	272	87,549+	431	283
132	90,246+	446	266	88,980−	451	279
133	91,692	466	261	90,431+	473	273
134	93,158	487	254	91,904	494	267
135	94,645−	+1,507	−1,247	93,398	+1,516	−1,260

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	$e = 0{,}40$			$e = 0{,}41$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}92428$	+304	−421	$\bar{1}{,}92007$	+312	−435
91	92732	306	413	92319	314	428
92	93038+	309	405	92633	316	420
93	93347−	310	398	92949	318	412
94	93657	312	390	93267+	320	404
95	$\bar{1}{,}93969$	+314	−382	$\bar{1}{,}93587+$	+322	−396
96	94283	315	374	93909+	324	388
97	94598+	318	365	94233+	326	380
98	94916−	318	357	94559−	327	372
99	95234+	320	348	94886	329	363
100	$\bar{1}{,}95554+$	+322	−339	$\bar{1}{,}95215-$	+330	−355
101	95876	323	331	95545	332	346
102	96199−	324	322	95877−	333	337
103	96523	325	313	96210−	334	328
104	96848	326	304	96544−	335	319
105	$\bar{1}{,}97174+$	+327	−295	$\bar{1}{,}96879$	+336	−310
106	97501+	328	286	97215+	338	300
107	97829+	329	276	97553−	338	291
108	98158	329	267	97891−	338	282
109	98487+	330	258	98229+	340	272
110	$\bar{1}{,}98817+$	+330	−248	$\bar{1}{,}98569$	+340	−263
111	99147+	331	238	98909−	340	253
112	99478	331	229	99249	341	243
113	$\bar{1}{,}99809-$	331	219	99590−	340	233
114	0,00140−	330	210	$\bar{1}{,}99930+$	341	223
115	0,00470+	+331	−199	0,00271	+341	−213
116	00801	330	189	00612−	340	203
117	01131	330	179	00952	340	193
118	01461	329	169	01292	339	182
119	01790+	329	159	01631+	339	171
120	0,02119	+328	−149	0,01970+	+339	−161
121	02447−	327	138	02309−	337	151
122	02774−	325	128	02646−	336	141
123	03099+	325	117	02982	335	130
124	03424−	323	107	03317	333	119
125	0,03747−	+321	− 97	0,03650+	+332	−108
126	04068+	320	86	03982+	331	97
127	04388	318	75	04313	328	87
128	04706	316	65	04641+	327	76
129	05022	314	54	04968	324	66
130	0,05336−	+311	− 44	0,05292+	+322	− 54
131	05647+	309	33	05614+	320	44
132	05956+	307	22	05934	317	33
133	06263−	303	12	06251	314	22
134	06566	300	− 1	06565	311	12
135	0,06866+	+298	+ 10	0,06876	+308	− 1

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	e = 0,40			e = 0,41		
v	M	D	D'	M	D	D'
135°	94°,645 −	+1°,507	−1°,247	93°,398	+1°,516	−1°,260
136	96,152 −	528	238	94,914 −	537	253
137	97,680 −	548	229	96,451 −	558	244
138	99,228 +	570	219	98,009 +	581	233
139	100,798 −	590	208	99,590 −	602	223
140	102,388 −	+1,610	−1,196	101,192 −	+1,623	−1,212
141	103,998 +	632	183	102,815	645	199
142	105,630 −	652	170	104,460	667	185
143	107,282 −	672	155	106,127	688	171
144	108,954	693	139	107,815	710	156
145	110,647	+1,713	−1,122	109,525 −	+1,730	−1,140
146	112,360 +	734	105	111,255 +	752	122
147	114,094 −	753	087	113,007 +	773	103
148	115,847	773	067	114,780	794	084
149	117,620	793	046	116,574 −	814	064
150	119,413 −	+1,811	−1,025	118,388 −	+1,834	−1,042
151	121,224 +	831	1,002	120,222	854	1,019
152	123,055	850	0,979	122,076 +	874	0,996
153	124,905 −	867	955	123,950 +	893	971
154	126,772 +	886	929	125,843 +	912	945
155	128,658	+1,903	−0,903	127,755 +	+1,931	−0,919
156	130,561	920	875	129,686	949	892
157	132,481 +	937	846	131,635 −	966	863
158	134,418 +	953	817	133,601	1,983	834
159	136,371 +	969	787	135,584	2,000	803
160	138,340	+1,984	−0,756	137,584	+2,016	−0,771
161	140,324	1,998	724	139,600 −	031	739
162	142,322 +	2,013	691	141,631	046	706
163	144,335	026	658	143,677	060	672
164	146,361 −	038	624	145,737	074	637
165	148,399	+2,051	−0,588	147,811 −	+2,086	−0,601
166	150,450 −	061	553	149,897	098	565
167	152,511 +	073	516	151,995 +	110	527
168	154,584	082	479	154,105	120	490
169	156,666 +	092	441	156,225	130	451
170	158,758	+2,100	−0,403	158,355	+2,139	−0,412
171	160,858	107	364	160,494 −	146	373
172	162,965 +	115	325	162,640 +	154	332
173	165,080 −	120	286	164,794 +	161	291
174	167,200	125	245	166,955 −	166	251
175	169,325 +	+2,130	−0,204	169,121 −	+2,170	−0,210
176	171,455	133	164	171,291	174	168
177	173,588 +	136	123	173,465	177	126
178	175,724	138	082	175,642 −	178	084
179	177,862 −	138	042	177,820 +	180	042
180	180,000	+2,138	−0,000	180,000	+2,180	−0,000

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	$e = 0{,}40$			$e = 0{,}41$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,06866+	+298	+ 10	0,06876	+308	− 1
136	07164	294	20	07184	304	+ 10
137	07458	290	30	07488+	301	21
138	07748+	287	41	07789+	297	31
139	08035	283	51	08086+	294	42
140	0,08318	+279	+ 62	0,08380−	+289	+ 52
141	08597	275	72	08669	285	63
142	08872	270	82	08954−	280	73
143	09142	266	92	09234	276	83
144	09408	261	102	09510−	271	93
145	0,09669	+256	+112	0,09781−	+265	+103
146	09925+	251	121	10046+	261	114
147	10176+	246	131	10307	255	123
148	10422	241	140	10562+	250	133
149	10663−	234	149	10812	244	142
150	0,10897+	+229	+159	0,11056	+238	+152
151	11126+	224	168	11294	232	161
152	11350−	216	176	11526−	225	169
153	11566+	211	185	11751	219	179
154	11777	204	193	11970	213	187
155	0,11981+	+198	+202	0,12183−	+205	+195
156	12179	191	209	12388	199	204
157	12370	184	217	12587−	191	211
158	12554	177	224	12778	184	219
159	12731	170	231	12962+	177	227
160	0,12901	+162	+238	0,13139	+169	+233
161	13063+	155	245	13308	161	240
162	13218+	148	251	13469+	154	247
163	13366−	139	257	13623	145	253
164	13505+	132	263	13768+	138	259
165	0,13637+	+124	+269	0,13906−	+129	+264
166	13761	116	274	14035−	120	270
167	13877	108	278	14155+	112	275
168	13985	99	282	14267+	104	280
169	14084	91	287	14371	95	284
170	0,14175	+ 84	+291	0,14466	+ 86	+288
171	14259	73	293	14552	77	291
172	14332	66	297	14629	69	295
173	14398−	56	300	14698−	59	297
174	14454+	49	303	14757	50	300
175	0,14503−	+ 39	+304	0,14807+	+ 41	+302
176	14542+	31	306	14848+	33	304
177	14573	22	308	14881−	23	305
178	14595	13	309	14904−	13	306
179	14608+	+ 5	309	14917+	+ 5	307
180	0,14613	− 5	+309	0,14922	− 5	+307

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	$e = 0{,}42$			$e = 0{,}43$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+0,371	−0,000	0,000	+0,360	−0,000
1	0,371 −	370	011	0,360	360	011
2	0,741 +	371	021	0,720	360	021
3	1,112 +	371	032	1,080	360	032
4	1,483 +	372	043	1,440	361	042
5	1,855 −	+0,371	−0,054	1,801 −	+0,361	−0,054
6	2,226 +	373	064	2,162 −	361	064
7	2,599 −	372	076	2,523	362	075
8	2,971	373	086	2,885 −	362	086
9	3,344 +	374	097	3,247	363	096
10	3,718	+0,374	−0,108	3,610 −	+0,363	−0,107
11	4,092 +	375	119	3,973 +	364	117
12	4,467 +	376	130	4,337 +	366	128
13	4,843 +	377	140	4,703 −	365	139
14	5,220 +	378	152	5,068 +	367	149
15	5,598	+0,379	−0,163	5,435 +	+0,368	−0,160
16	5,977 −	380	174	5,803 +	369	171
17	6,357 −	381	185	6,172	370	182
18	6,738 −	382	196	6,542 +	372	192
19	7,120	384	206	6,914 −	372	204
20	7,504 −	+0,385	−0,218	7,286	+0,374	−0,214
21	7,889 −	386	229	7,660	376	225
22	8,275	388	239	8,036 −	377	236
23	8,663	389	250	8,413 −	378	247
24	9,052 +	392	261	8,791	380	258
25	9,444 −	+0,393	−0,273	9,171 +	+0,382	−0,268
26	9,837 −	395	284	9,553	384	279
27	10,232 −	396	295	9,937	386	291
28	10,628 +	399	305	10,323 −	387	302
29	11,027	401	317	10,710	390	312
30	11,428	+0,403	−0,328	11,100 −	+0,392	−0,324
31	11,831	405	339	11,492 −	394	335
32	12,236	408	350	11,886 −	396	346
33	12,644 −	410	362	12,282	399	357
34	13,054 −	412	373	12,681	401	368
35	13,466	+0,415	−0,384	13,082 −	+0,404	−0,379
36	13,881 +	418	395	13,486 −	406	391
37	14,299	420	407	13,892	409	401
38	14,719 +	424	418	14,301	412	413
39	15,143	426	430	14,713	415	424
40	15,569	+0,430	−0,441	15,128	+0,418	−0,435
41	15,999 −	432	453	15,546	421	447
42	16,431	436	464	15,967	424	458
43	16,867	439	476	16,391	428	469
44	17,306	443	487	16,819 −	431	481
45	17,749 −	+0,446	−0,499	17,250 −	+0,434	−0,493

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	$e = 0{,}42$			$e = 0{,}43$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
0°	$\bar{1}{,}76343$	+ 2	− 756	$\bar{1}{,}75587+$	+ 2	− 768
1	76345−	6	756	75589+	6	768
2	76351−	9	756	75595+	10	768
3	76360+	14	755	75605+	14	768
4	76374	18	755	75619+	18	768
5	$\bar{1}{,}76392-$	+ 21	− 755	$\bar{1}{,}75637+$	+ 22	− 768
6	76413+	26	754	75659	26	767
7	76439−	29	754	75685	30	767
8	76468	33	753	75715−	34	767
9	76501+	37	752	75749−	37	767
10	$\bar{1}{,}76538+$	+ 41	− 752	$\bar{1}{,}75786+$	+ 42	− 765
11	76579+	45	751	75828	46	765
12	76624+	49	750	75874	50	764
13	76673+	53	749	75924−	53	764
14	76726	57	749	75977	58	762
15	$\bar{1}{,}76783-$	+ 60	− 748	$\bar{1}{,}76035-$	+ 61	− 762
16	76843+	65	747	76096+	66	760
17	76908−	68	746	76162	69	759
18	76976	72	745	76231+	74	758
19	77048+	76	743	76305	77	757
20	$\bar{1}{,}77124+$	+ 80	− 742	$\bar{1}{,}76382+$	+ 82	− 755
21	77204+	84	740	76464−	85	755
22	77288+	88	739	76549	89	753
23	77376	92	738	76638+	93	751
24	77468−	95	737	76731+	97	750
25	$\bar{1}{,}77563+$	+100	− 735	$\bar{1}{,}76828-$	+102	− 748
26	77663−	103	733	76930−	105	747
27	77766	107	731	77035−	109	745
28	77873	111	729	77144−	113	743
29	77984	115	727	77257−	116	742
30	$\bar{1}{,}78099-$	+118	− 726	$\bar{1}{,}77373+$	+121	− 739
31	78217+	123	723	77494	125	737
32	78340	126	721	77619−	128	735
33	78466	130	719	77747	133	733
34	78596+	134	716	77880−	136	731
35	$\bar{1}{,}78730+$	+138	− 714	$\bar{1}{,}78016$	+140	− 728
36	78868	142	712	78156	144	726
37	79010−	145	710	78300	148	723
38	79155	149	707	78448	152	721
39	79304	153	704	78600	156	718
40	$\bar{1}{,}79457$	+157	− 701	$\bar{1}{,}78756-$	+159	− 716
41	79614−	160	699	78915	163	713
42	79774+	164	696	79078+	168	710
43	79938+	168	692	79246−	171	707
44	80106+	172	689	79417−	174	704
45	$\bar{1}{,}80278$	+176	− 687	$\bar{1}{,}79591+$	+179	− 700

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	$e = 0{,}42$			$e = 0{,}43$		
v	M	D	D'	M	D	D'
45°	17°,749−	+0°,446	−0°,499	17°,250−	+0°,434	−0°,493
46	18,195−	449	511	17,684+	438	504
47	18,644+	454	522	18,122+	442	515
48	19,098	457	534	18,564+	446	527
49	19,555+	462	545	19,010	450	539
50	20,017	+0,465	−0,557	19,460−	+0,453	−0,551
51	20,482+	470	569	19,913+	458	561
52	20,952	474	581	20,371+	463	573
53	21,426	479	592	20,834−	466	586
54	21,905−	483	605	21,300+	471	597
55	22,388−	+0,487	−0,617	21,771+	+0,476	−0,608
56	22,875+	493	628	22,247+	481	620
57	23,368	498	640	22,728	486	633
58	23,866−	502	652	23,214−	490	645
59	24,368+	508	664	23,704+	496	656
60	24,876	+0,513	−0,676	24,200	+0,501	−0,668
61	25,389+	519	688	24,701+	507	680
62	25,908	524	700	25,208	512	692
63	26,432+	530	712	25,720+	518	704
64	26,962+	537	724	26,238+	524	716
65	27,499−	+0,542	−0,737	26,762+	+0,530	−0,728
66	28,041−	548	749	27,292+	537	740
67	28,589	555	760	27,829−	542	753
68	29,144	561	773	28,371	549	765
69	29,705	568	785	28,920+	556	777
70	30,273+	+0,575	−0,797	29,476+	+0,563	−0,789
71	30,848	582	809	30,039	570	802
72	31,430	589	821	30,609−	577	814
73	32,019+	597	833	31,186	584	826
74	32,616	604	846	31,770+	592	838
75	33,220	+0,612	−0,858	32,362+	+0,600	−0,850
76	33,832	620	870	32,962	608	863
77	34,452	628	882	33,570	616	875
78	35,080	637	894	34,186−	624	887
79	35,717−	644	907	34,810	633	899
80	36,361+	+0,654	−0,918	35,443	+0,641	−0,912
81	37,015	663	931	36,084+	651	923
82	37,678−	672	943	36,735	660	936
83	38,350−	681	955	37,395	669	948
84	39,031−	690	967	38,064	679	960
85	39,721+	+0,701	−0,978	38,743	+0,688	−0,972
86	40,422	710	0,991	39,431+	699	984
87	41,132+	721	1,002	40,130+	709	0,996
88	41,853+	732	014	40,839+	720	1,008
89	42,585−	742	026	41,559	730	020
90	43,327−	+0,753	−1,038	42,289+	+0,742	−1,032

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	$e = 0{,}42$			$e = 0{,}43$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}80278$	+176	−687	$\bar{1}{,}79591+$	+179	−700
46	80454−	179	684	79770	183	698
47	80633−	183	680	79953−	186	695
48	80816−	186	677	80139−	190	691
49	81002	190	673	80329−	193	688
50	$\bar{1}{,}81192+$	+194	−670	$\bar{1}{,}80522+$	+198	−684
51	81386	198	666	80720	201	681
52	81584−	201	663	80921	205	677
53	81785−	205	659	81126	209	673
54	81990−	208	655	81335−	212	670
55	$\bar{1}{,}82198$	+212	−651	$\bar{1}{,}81547$	+216	−665
56	82410	215	647	81763	220	661
57	82625+	219	642	81983−	223	658
58	82844+	223	638	82206	227	653
59	83067	226	634	82433	230	649
60	$\bar{1}{,}83293$	+230	−630	$\bar{1}{,}82663+$	+235	−644
61	83523−	233	625	82898−	237	640
62	83756−	236	621	83135+	241	635
63	83992+	240	616	83376+	245	630
64	84232+	244	611	83621	248	626
65	$\bar{1}{,}84476-$	+246	−607	$\bar{1}{,}83869+$	+252	−621
66	84722+	250	601	84121	255	616
67	84972+	254	596	84376+	259	611
68	85226−	256	591	84635	262	606
69	85482+	260	585	84897	265	601
70	$\bar{1}{,}85742+$	+264	−580	$\bar{1}{,}85162$	+269	−595
71	86006−	266	575	85431	272	590
72	86272	270	569	85703	275	585
73	86542−	272	564	85978	279	579
74	86814+	276	557	86257−	281	573
75	$\bar{1}{,}87090$	+279	−552	$\bar{1}{,}86538$	+285	−567
76	87369	282	546	86823	288	561
77	87651	285	540	87111	291	555
78	87936−	288	534	87402+	294	549
79	88224−	290	528	87696+	298	542
80	$\bar{1}{,}88514+$	+294	−520	$\bar{1}{,}87994-$	+300	−537
81	88808	296	514	88294−	303	530
82	89104+	300	507	88597	306	523
83	89404−	302	501	88903	309	516
84	89706−	304	494	89212−	311	510
85	$\bar{1}{,}90010+$	+307	−487	$\bar{1}{,}89523+$	+315	−502
86	90317−	310	479	89838−	317	496
87	90627+	313	472	90155−	319	489
88	90940−	314	466	90474+	322	481
89	91254+	318	458	90796+	325	473
90	$\bar{1}{,}91572-$	+319	−451	$\bar{1}{,}91121$	+327	−466

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	e = 0,42			e = 0,43		
v	M	D	D'	M	D	D'
90°	43°,327 −	+0°,753	−1°,038	42°,289 +	+0°,742	−1°,032
91	44,080 −	764	049	43,031 −	753	044
92	44,844 −	775	060	43,784 −	764	056
93	45,619 +	788	071	44,548	776	067
94	46,407 −	799	083	45,324	788	078
95	47,206	+0,811	−1,094	46,112	+0,801	−1,089
96	48,017 +	824	104	46,913 −	813	101
97	48,841 +	837	115	47,726	826	112
98	49,678	850	126	48,552	839	123
99	50,528 −	862	137	49,391	853	133
100	51,390 +	+0,877	−1,146	50,244 −	+0,866	−1,144
101	52,267	890	157	51,110	880	154
102	53,157 +	905	167	51,990 +	895	164
103	54,062 −	918	177	52,885	909	175
104	54,980 +	934	186	53,794 +	925	184
105	55,914	+0,948	−1,195	54,719 −	+0,939	−1,195
106	56,862 +	964	204	55,658	955	204
107	57,826	979	213	56,613	971	213
108	58,805	0,995	221	57,584 −	0,987	222
109	59,800	1,011	229	58,571 −	1,003	231
110	60,811	+1,028	−1,237	59,574 −	+1,020	−1,239
111	61,839 −	044	245	60,594 −	037	247
112	62,883 −	061	252	61,631 −	054	255
113	63,944	078	259	62,685	072	261
114	65,022 +	096	265	63,757	090	268
115	66,118 +	+1,114	−1,271	64,847	+1,108	−1,275
116	67,232	132	277	65,955	127	281
117	68,364	150	282	67,082	146	287
118	69,514 +	169	286	68,228 −	165	292
119	70,683 +	188	290	69,393 −	184	297
120	71,871 −	+1,208	−1,294	70,577	+1,204	−1,301
121	73,079	227	298	71,781	224	304
122	74,306 −	246	301	73,005 +	245	307
123	75,552 +	267	302	74,250	265	310
124	76,819	287	304	75,515	286	312
125	78,106 −	+1,307	−1,305	76,801	+1,307	−1,313
126	79,413	328	305	78,108 +	329	314
127	80,741 +	349	304	79,437	350	314
128	82,090 +	371	303	80,787 +	372	313
129	83,461 −	392	302	82,159 +	395	312
130	84,853 −	+1,413	−1,299	83,554	+1,416	−1,310
131	86,266	435	296	84,970 +	440	307
132	87,701	457	291	86,410 −	462	304
133	89,158 −	479	286	87,872 −	484	300
134	90,637 −	501	281	89,356 +	508	294
135	92,138	+1,523	−1,274	90,864	+1,531	−1,288

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	$e = 0{,}42$			$e = 0{,}43$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}91572-$	+319	−451	$\bar{1}{,}91121$	+327	−466
91	91891	322	443	91448+	330	458
92	92213	324	435	91778−	332	451
93	92537	326	427	92110−	334	443
94	92863	328	419	92444−	336	435
95	$\bar{1}{,}93191+$	+330	−411	$\bar{1}{,}92780$	+338	−427
96	93521+	332	403	93118+	341	418
97	93853+	334	394	93459−	342	410
98	94187+	336	386	93801	344	402
99	94523	337	378	94145+	346	393
100	$\bar{1}{,}94860+$	+339	−369	$\bar{1}{,}94491+$	+348	−384
101	95199+	341	360	94839	349	376
102	95540	342	352	95188+	351	366
103	95882	343	343	95539+	353	357
104	96225	344	333	95892−	353	349
105	$\bar{1}{,}96569+$	+346	−324	$\bar{1}{,}96245$	+355	−339
106	96915	347	315	96600	356	330
107	97262−	347	306	96956	357	321
108	97609	348	296	97313	358	311
109	97957+	349	286	97671	359	301
110	$\bar{1}{,}98306+$	+350	−276	$\bar{1}{,}98030-$	+359	−292
111	98656	350	267	98389	360	282
112	99006	351	257	98749	361	272
113	99357−	350	247	99110−	360	262
114	$\bar{1}{,}99707+$	351	237	99470+	361	251
115	0,00058	+351	−227	$\bar{1}{,}99831$	+361	−241
116	00409−	350	217	0,00192+	361	231
117	00759+	351	206	00553	361	220
118	01110−	350	196	00914	360	210
119	01460−	349	186	01274+	360	199
120	0,01809	+349	−175	0,01634	+359	−188
121	02158−	347	165	01993+	359	177
122	02505+	347	153	02352−	357	167
123	02852	346	143	02709+	357	156
124	03198−	344	132	03066−	355	145
125	0,03542	+343	−121	0,03421−	+353	−134
126	03885−	341	111	03774+	352	123
127	04226−	339	100	04126+	351	112
128	04565	337	88	04477−	348	101
129	04902+	336	77	04825	346	90
130	0,05238−	+332	− 67	0,05171	+344	− 78
131	05570+	331	55	05515	341	67
132	05901	328	45	05856+	339	56
133	06229−	324	34	06195	336	45
134	06553+	322	22	06531	333	34
135	0,06875	+319	− 11	0,06864−	+329	− 23

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	$e = 0{,}42$			$e = 0{,}43$		
v	M	D	D'	M	D	D'
135°	92°,138	+1°,523	−1°,274	90°,864	+1°,531	−1°,288
136	93,661+	546	266	92,395	554	281
137	95,207+	569	258	93,949+	578	272
138	96,776−	591	249	95,527	601	264
139	98,367−	613	239	97,128	625	254
140	99,980	+1,636	−1,227	98,753	+1,648	−1,243
141	101,616	659	215	100,401	672	232
142	103,275−	681	202	102,073−	695	219
143	104,956−	703	188	103,768	719	205
144	106,659+	726	172	105,487−	742	190
145	108,385+	+1,748	−1,156	107,229	+1,765	−1,174
146	110,133+	771	139	108,994+	789	157
147	111,904−	792	121	110,783	811	139
148	113,696	814	102	112,594+	835	119
149	115,510	836	081	114,429	857	099
150	117,346−	+1,857	−1,060	116,286	+1,879	−1,078
151	119,203−	877	038	118,165+	902	055
152	121,080+	899	1,013	120,067	923	032
153	122,979	919	0,989	121,990	944	1,007
154	124,898−	938	964	123,934+	966	0,981
155	126,836+	+1,958	−0,936	125,900	+1,986	−0,954
156	128,794+	978	908	127,886	2,006	926
157	130,772−	1,995	880	129,892	026	897
158	132,767+	2,014	849	131,918−	044	867
159	134,781+	032	819	133,962+	064	835
160	136,813−	+2,048	−0,787	136,026−	+2,080	−0,804
161	138,861−	064	755	138,106+	099	770
162	140,925	080	720	140,205−	114	736
163	143,005+	095	686	142,319+	131	700
164	145,100+	110	650	144,450	146	665
165	147,210−	+2,122	−0,614	146,596−	+2,159	−0,628
166	149,332+	136	577	148,755+	174	589
167	151,468	147	539	150,929	186	551
168	153,615+	159	500	153,115	198	512
169	155,774	169	461	155,313−	209	472
170	157,943	+2,178	−0,421	157,522−	+2,218	−0,431
171	160,121	187	381	159,740+	228	389
172	162,308	195	340	161,968+	236	347
173	164,503−	201	299	164,204+	243	305
174	166,704	207	257	166,447+	250	262
175	168,911	+2,212	−0,214	168,697−	+2,254	−0,220
176	171,123	216	172	170,951	259	176
177	173,339−	219	129	173,210−	261	132
178	175,558−	220	087	175,471+	264	088
179	177,778+	222	043	177,735	265	044
180	180,000	+2,222	−0,000	180,000	+2,265	−0,000

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	$e = 0{,}42$			$e = 0{,}43$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,06875	+319	− 11	0,06864−	+329	− 23
136	07194−	315	− 1	07193	326	− 11
137	07509	311	+ 10	07519+	323	0
138	07820+	308	22	07842−	318	+ 11
139	08128	304	32	08160	315	22
140	0,08432	+300	+ 43	0,08475−	+310	+ 33
141	08732−	295	53	08785	306	44
142	09027−	290	64	09091−	301	54
143	09317+	286	75	09392	296	65
144	09603+	281	85	09688	291	76
145	0,09884	+276	+ 95	0,09979+	+286	+ 87
146	10160	270	105	10265+	281	97
147	10430+	265	116	10546−	275	107
148	10695+	259	126	10821−	268	117
149	10954+	254	135	11089+	263	128
150	0,11208−	+247	+144	0,11352	+257	+138
151	11455−	240	154	11609−	250	147
152	11695+	235	164	11859−	243	156
153	11930−	227	172	12102	236	166
154	12157+	221	181	12338+	230	175
155	0,12378	+214	+190	0,12568−	+222	+183
156	12592−	206	198	12790−	214	192
157	12798	199	206	13004+	207	201
158	12997	192	214	13211	199	209
159	13189−	183	221	13410−	191	217
160	0,13372+	+176	+229	0,13601+	+183	+225
161	13548+	168	236	13784+	175	232
162	13716+	160	243	13959	166	238
163	13876	151	249	14125	158	245
164	14027+	143	256	14283−	148	251
165	0,14170+	+135	+261	0,14431+	+140	+258
166	14305−	125	266	14571	131	263
167	14430	117	272	14702	122	268
168	14547	108	277	14824−	112	273
169	14655	99	281	14936	103	278
170	0,14754−	+ 89	+285	0,15039−	+ 93	+282
171	14843+	81	289	15132	84	286
172	14924	71	292	15216	74	289
173	14995	62	295	15290	65	293
174	15057	52	298	15355−	54	295
175	0,15109+	+ 43	+300	0,15409	+ 45	+298
176	15152+	34	302	15454	35	299
177	15186−	24	303	15489−	25	301
178	15210−	14	304	15514−	14	301
179	15224	+ 5	304	15528−	+ 6	303
180	0,15229	− 5	+305	0,15534−	− 6	+302

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	$e = 0{,}44$			$e = 0{,}45$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+0,349	−0,000	0,000	+0,339	−0,000
1	0,349+	350	010	0,339−	339	011
2	0,699−	349	021	0,678−	339	021
3	1,048	350	031	1,017−	339	031
4	1,398−	349	042	1,356−	339	042
5	1,747+	+0,351	−0,052	1,695	+0,340	−0,052
6	2,098−	350	063	2,035−	340	062
7	2,448+	351	073	2,375	340	073
8	2,799+	352	084	2,715+	341	082
9	3,151	352	095	3,056+	342	093
10	3,503	+0,353	−0,105	3,398	+0,342	−0,103
11	3,856	353	116	3,740+	343	113
12	4,209+	355	126	4,083+	344	124
13	4,564	355	137	4,427	345	135
14	4,919	356	147	4,772−	345	145
15	5,275	+0,357	−0,158	5,117+	+0,347	−0,155
16	5,632+	358	168	5,464−	347	166
17	5,990+	360	179	5,811+	349	176
18	6,350−	360	190	6,160	350	187
19	6,710+	362	200	6,510	351	197
20	7,072	+0,363	−0,211	6,861	+0,352	−0,208
21	7,435	365	222	7,213+	354	218
22	7,800−	366	233	7,567+	356	229
23	8,166	367	243	7,923−	357	240
24	8,533+	370	253	8,280−	358	251
25	8,903−	+0,371	−0,265	8,638	+0,360	−0,261
26	9,274−	372	276	8,998+	362	271
27	9,646+	375	286	9,360+	364	282
28	10,021	377	297	9,724	366	293
29	10,398−	378	308	10,090	367	304
30	10,776+	+0,381	−0,319	10,457+	+0,370	−0,314
31	11,157	383	330	10,827+	372	325
32	11,540	385	341	11,199+	375	336
33	11,925	388	351	11,574−	376	347
34	12,313−	390	363	11,950	379	358
35	12,703−	+0,392	−0,374	12,329	+0,382	−0,368
36	13,095+	396	384	12,711−	384	380
37	13,491−	397	396	13,095−	386	391
38	13,888+	401	407	13,481+	390	401
39	14,289	404	418	13,871	392	413
40	14,693−	+0,406	−0,430	14,263+	+0,396	−0,423
41	15,099+	410	440	14,659−	398	435
42	15,509	413	452	15,057	402	446
43	15,922−	416	463	15,459−	404	457
44	16,338	419	475	15,863+	409	468
45	16,757+	+0,423	−0,485	16,272−	+0,411	−0,480

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	$e = 0{,}44$			$e = 0{,}45$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
0°	$\bar{1}{,}74819$	+ 2	− 783	$\bar{1}{,}74036+$	+ 2	− 797
1	74821	6	783	74038+	6	797
2	74827	10	783	74044+	11	796
3	74837	14	782	74055−	14	797
4	74851	18	782	74069	19	796
5	$\bar{1}{,}74869+$	+ 23	− 781	$\bar{1}{,}74088$	+ 22	− 797
6	74892−	26	782	74110	27	796
7	74918	30	781	74137	31	796
8	74948	34	780	74168−	35	795
9	74982+	39	779	74203−	39	795
10	$\bar{1}{,}75021$	+ 42	− 779	$\bar{1}{,}74242-$	+ 43	− 794
11	75063+	47	778	74285−	47	793
12	75110−	50	778	74332−	51	793
13	75160+	55	777	74383	55	791
14	75215−	58	777	74438+	60	790
15	$\bar{1}{,}75273+$	+ 63	− 775	$\bar{1}{,}74498$	+ 64	− 790
16	75336	67	774	74562−	67	789
17	75403−	70	774	74629+	72	788
18	75473	75	772	74701	76	787
19	75548	79	771	74777	80	786
20	$\bar{1}{,}75627-$	+ 82	− 770	$\bar{1}{,}74857$	+ 84	− 784
21	75709+	87	768	74941	88	783
22	75796	91	767	75029	93	782
23	75887−	94	765	75122	95	781
24	75981+	99	764	75217+	101	778
25	$\bar{1}{,}76080+$	+103	− 762	$\bar{1}{,}75318-$	+104	− 777
26	76183	107	761	75422+	109	775
27	76290−	111	759	75531−	112	774
28	76401−	114	758	75643+	117	772
29	76515+	119	755	75760	121	770
30	$\bar{1}{,}76634$	+123	− 753	$\bar{1}{,}75881-$	+124	− 769
31	76757	127	752	76005+	129	766
32	76884−	130	750	76134	133	764
33	77014+	135	747	76267	137	762
34	77149	139	745	76404	141	760
35	$\bar{1}{,}77288-$	+142	− 743	$\bar{1}{,}76545$	+145	− 758
36	77430	147	740	76690	149	755
37	77577−	150	738	76839−	153	753
38	77727	155	735	76992	157	750
39	77882−	158	733	77149	161	748
40	$\bar{1}{,}78040$	+162	− 730	$\bar{1}{,}77310$	+165	− 745
41	78202+	166	727	77475	169	742
42	78368+	171	724	77644	173	740
43	78539−	174	722	77817	177	737
44	78713−	178	719	77994	181	734
45	$\bar{1}{,}78891-$	+181	− 716	$\bar{1}{,}78175$	+185	− 731

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	$e = 0,44$			$e = 0,45$		
v	M	D	D'	M	D	D'
45°	16°,757+	+0°,423	−0°,485	16°,272−	+0°,411	−0°,480
46	17,180+	427	497	16,683	415	491
47	17,607	430	509	17,098+	419	502
48	18,037+	434	520	17,517	423	513
49	18,471+	438	531	17,940−	426	525
50	18,909+	+0,443	−0,543	18,366	+0,431	−0,536
51	19,352−	446	555	18,797−	434	549
52	19,798−	450	567	19,231+	439	559
53	20,248+	455	578	19,670	443	571
54	20,703	460	590	20,113+	448	582
55	21,163−	+0,464	−0,602	20,561	+0,452	−0,594
56	21,627−	468	614	21,013+	457	606
57	22,095+	474	625	21,470+	462	617
58	22,569	479	637	21,932	467	629
59	23,048	484	649	22,399	472	641
60	23,532−	+0,489	−0,661	22,871	+0,477	−0,653
61	24,021	495	673	23,348	483	665
62	24,516−	500	685	23,831	488	677
63	25,016−	506	697	24,319	494	689
64	25,522−	512	709	24,813	500	701
65	26,034−	+0,518	−0,721	25,313	+0,506	−0,713
66	26,552−	524	733	25,819−	512	726
67	27,076−	530	745	26,331−	518	738
68	27,606	537	757	26,849	525	750
69	28,143	544	769	27,374−	531	762
70	28,687	+0,550	−0,782	27,905	+0,539	−0,774
71	29,237+	558	793	28,444−	545	787
72	29,795	565	806	28,989	552	799
73	30,360−	572	819	29,541+	560	810
74	30,932	580	831	30,101+	568	823
75	31,512−	+0,587	−0,843	30,669	+0,575	−0,836
76	32,099+	596	855	31,244	583	848
77	32,695	604	868	31,827+	592	860
78	33,299−	612	880	32,419−	599	873
79	33,911−	620	893	33,018+	609	884
80	34,531+	+0,630	−0,904	33,627	+0,617	−0,897
81	35,161−	638	917	34,244	626	910
82	35,799	648	929	34,870	635	922
83	36,447−	657	942	35,505+	645	934
84	37,104	667	954	36,150+	655	946
85	37,771−	+0,676	−0,966	36,805	+0,664	−0,959
86	38,447	687	978	37,469+	675	971
87	39,134	697	0,990	38,144	685	984
88	39,831	708	1,002	38,829	696	0,996
89	40,539	718	014	39,525−	706	1,009
90	41,257+	+0,730	−1,026	40,231+	+0,718	−1,020

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	$e = 0{,}44$			$e = 0{,}45$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}78891-$	+181	−716	$\bar{1}{,}78175$	+185	−731
46	,79072+	186	712	78360	189	728
47	79258	190	709	78549	193	725
48	79448−	193	706	78742−	196	721
49	79641	197	703	78938+	201	717
50	$\bar{1}{,}79838+$	+201	−699	$\bar{1}{,}79139+$	+205	−714
51	80039+	205	695	79344	208	711
52	80244+	209	692	79552+	213	707
53	80453	212	688	79765−	216	704
54	80665+	217	684	79981	220	700
55	$\bar{1}{,}80882-$	+220	−681	$\bar{1}{,}80201+$	+224	−696
56	81102−	223	677	80425+	228	692
57	81325+	228	672	80653	232	688
58	81553	231	668	80885−	235	684
59	81784	235	664	81120+	239	679
60	$\bar{1}{,}82019$	+239	−660	$\bar{1}{,}81359+$	+243	−675
61	82258−	242	656	81602+	247	670
62	82500	246	651	81849+	251	666
63	82746−	249	646	82100−	254	662
64	82995+	253	641	82354	258	657
65	$\bar{1}{,}83248+$	+257	−636	$\bar{1}{,}82612$	+261	−652
66	83505	260	632	82873+	266	647
67	83765	264	626	83139−	268	643
68	84029	267	622	83407+	273	637
69	84296	271	616	83680	276	632
70	$\bar{1}{,}84567$	+274	−611	$\bar{1}{,}83956$	+279	−627
71	84841	277	606	84235+	284	621
72	85118+	281	599	84519−	286	617
73	85399+	285	594	84805	290	610
74	85684−	287	589	85095	293	605
75	$\bar{1}{,}85971+$	+291	−583	$\bar{1}{,}85388+$	+297	−599
76	86262	294	577	85685+	300	593
77	86556	297	571	85985+	304	587
78	86853+	301	564	86289	307	581
79	87154	303	558	86596−	309	575
80	$\bar{1}{,}87457+$	+307	−552	$\bar{1}{,}86905+$	+314	−568
81	87764	310	545	87219−	316	562
82	88074	313	539	87535	319	555
83	88387−	315	533	87854+	323	548
84	88702	319	525	88177	325	542
85	$\bar{1}{,}89021-$	+321	−519	$\bar{1}{,}88502+$	+329	−535
86	89342	324	511	88831−	331	528
87	89666+	327	504	89162	334	521
88	89993+	330	497	89496+	337	513
89	90323	332	490	89833+	340	506
90	$\bar{1}{,}90655$	+335	−482	$\bar{1}{,}90173$	+343	−498

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	$e = 0,44$			$e = 0,45$		
v	M	D	D'	M	D	D'
90°	41°,257+	+0°,730	−1°,026	40°,231+	+0°,718	−1°,020
91	41,987+	741	038	40,949	729	032
92	42,728+	753	050	41,678+	741	044
93	43,481	765	062	42,419+	753	056
94	44,246	777	074	43,172+	766	068
95	45,023−	+0,789	−1,085	43,938−	+0,778	−1,081
96	45,812	802	096	44,716−	790	093
97	46,614	815	108	45,506+	804	104
98	47,429	829	119	46,310	817	115
99	48,258−	842	131	47,127+	831	126
100	49,100−	+0,856	−1,142	47,958+	+0,846	−1,137
101	49,956−	870	152	48,804−	859	149
102	50,826−	884	163	49,663	874	160
103	51,710+	900	173	50,537+	890	170
104	52,610−	914	183	51,427−	904	182
105	53,524+	+0,930	−1,193	52,331	+0,920	−1,192
106	54,454+	946	203	53,251+	937	202
107	55,400	962	212	54,188−	952	212
108	56,362	978	222	55,140	969	222
109	57,340	0,995	231	56,109+	0,987	231
110	58,335	+1,012	−1,239	57,096−	+1,003	−1,241
111	59,347	029	248	58,099	021	249
112	60,376+	048	256	59,120+	040	257
113	61,424−	065	264	60,160−	057	266
114	62,489−	083	272	61,217+	077	273
115	63,572	+1,102	−1,278	62,294	+1,096	−1,281
116	64,674+	121	284	63,390−	115	289
117	65,795+	141	290	64,505−	134	295
118	66,936	160	297	65,639+	155	301
119	68,096	180	302	66,794+	176	307
120	69,276+	+1,201	−1,306	67,970−	+1,196	−1,313
121	70,477−	221	311	69,166	217	317
122	71,698−	242	315	70,383+	239	321
123	72,940−	263	318	71,622	261	325
124	74,203	285	320	72,883−	283	329
125	75,488−	+1,306	−1,322	74,166−	+1,305	−1,331
126	76,794	329	323	75,471−	328	333
127	78,123−	351	324	76,799−	351	334
128	79,474−	373	324	78,150−	374	335
129	80,847+	397	323	79,524	398	334
130	82,244−	+1,419	−1,322	80,922	+1,422	−1,333
131	83,663	443	319	82,344	446	332
132	85,106−	466	316	83,790	470	329
133	86,572+	490	312	85,260	495	325
134	88,062+	514	307	86,755	520	321
135	89,576+	+1,538	−1,301	88,275−	+1,544	−1,317

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	$e = 0,44$			$e = 0,45$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1},90655$	+335	−482	$\bar{1},90173$	+343	−498
91	90990	337	474	90516 −	345	491
92	91327	340	466	90861 −	347	485
93	91667	342	459	91208	350	475
94	92009	344	451	91558	353	467
95	$\bar{1},92353$ +	+347	−442	$\bar{1},91911$ −	+355	−459
96	92700	349	434	92266 −	357	451
97	93049 −	350	426	92623 −	359	443
98	93399 +	353	417	92982	361	434
99	93752 +	355	409	93343 +	364	425
100	$\bar{1},94107$	+356	−400	$\bar{1},93707$ −	+365	−417
101	94463 +	359	391	94072	367	408
102	94822 −	360	383	94439	369	399
103	95182 −	361	374	94808	371	389
104	95543	363	364	95179 −	372	381
105	$\bar{1},95906$	+364	−355	$\bar{1},95551$ −	+373	−371
106	96270	365	346	95924 +	375	361
107	96635 +	367	336	96299 +	377	351
108	97002	368	326	96676 −	377	343
109	97370 −	368	317	97053	378	332
110	$\bar{1},97738$	+369	−307	$\bar{1},97431$ +	+380	−322
111	98107 +	370	296	97811 −	380	313
112	98477 +	371	286	98191 −	380	303
113	98848	371	277	98571 +	382	292
114	99219	371	266	98953 −	381	282
115	$\bar{1},99590$	+371	−256	$\bar{1},99334$	+382	−271
116	$\bar{1},99961$ +	372	245	$\bar{1},99716$	382	261
117	0,00333 +	371	235	0,00098	382	250
118	00704	371	224	00480	382	239
119	01075	371	213	00862 −	381	229
120	0,01446 −	+370	−203	0,01243	+381	−217
121	01816 −	369	192	01624	380	206
122	02185	368	181	02004	379	195
123	02553	368	170	02383 +	379	184
124	02921 −	366	159	02762	377	173
125	0,03287 −	+364	−148	0,03139	+376	−161
126	03651 +	363	136	03515	374	150
127	04014 +	362	125	03889 +	373	138
128	04376	359	114	04262	371	127
129	04735 +	358	102	04633	369	116
130	0,05093 −	+355	− 91	0,05002 −	+366	−104
131	05448 −	352	80	05368	364	92
132	05800 +	350	68	05732	361	80
133	06150	347	57	06093 +	359	69
134	06497	344	45	06452	355	57
135	0,06841	+341	− 34	0,06807 +	+352	− 45

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	$e = 0,44$			$e = 0,45$		
v	M	D	D'	M	D	D'
135°	89°,576+	+1°,538	−1°,301	88°,275−	+1°,544	−1°,317
136	91,114+	563	295	89,819	570	310
137	92,677−	586	288	91,389−	595	303
138	94,263	611	279	92,984−	620	295
139	95,874	636	270	94,604	646	286
140	97,510−	+1,659	−1,260	96,250	+1,671	−1,276
141	99,169+	685	248	97,921+	697	265
142	100,854	709	236	99,618+	723	253
143	102,563	734	222	101,341	748	240
144	104,297−	758	208	103,089	774	226
145	106,055	+1,782	−1,192	104,863	+1,799	−1,210
146	107,837+	807	175	106,662	825	194
147	109,644	831	157	108,487	850	176
148	111,475	855	138	110,337−	875	157
149	113,330−	878	118	112,212−	900	137
150	115,208	+1,902	−1,096	114,112−	+1,924	−1,116
151	117,110	925	074	116,036	949	093
152	119,035	948	050	117,985	972	070
153	120,983	970	1,026	119,957+	1,997	044
154	122,953+	1,993	0,999	121,954−	2,019	1,019
155	124,946−	+2,014	−0,973	123,973+	+2,043	−0,991
156	126,960	035	944	126,016−	064	963
157	128,995	056	915	128,080+	087	933
158	131,051	076	884	130,167−	107	903
159	133,127	095	853	132,274	128	870
160	135,222+	+2,114	−0,820	134,402	+2,148	−0,837
161	137,336+	133	786	136,550	167	803
162	139,469	150	752	138,717+	186	768
163	141,619	166	716	140,903	203	732
164	143,785+	183	679	143,106+	221	694
165	145,968	+2,198	−0,641	145,327−	+2,236	−0,656
166	148,166	212	603	147,563−	251	617
167	150,378	225	564	149,814	266	576
168	152,603	238	523	152,080−	279	536
169	154,841	250	482	154,359−	291	494
170	157,091−	+2,260	−0,441	156,650−	+2,302	−0,452
171	159,351−	270	399	158,952	313	408
172	161,621−	278	356	161,265−	321	365
173	163,899	286	313	163,586+	330	320
174	166,185	292	269	165,916	337	275
175	168,477+	+2,298	−0,224	168,253−	+2,342	−0,230
176	170,775+	303	180	170,595	347	184
177	173,078−	305	136	172,942+	351	138
178	175,383+	308	090	175,293	353	093
179	177,691	309	045	177,646	354	046
180	180,000	+2,309	−0,000	180,000	+2,354	−0,000

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	$e = 0{,}44$			$e = 0{,}45$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,06841	+341	− 34	0,06807+	+352	− 45
136	07182	337	23	07159+	349	34
137	07519	334	− 11	07508	345	22
138	07853−	329	0	07853−	341	− 11
139	08182	326	+ 12	08194−	336	0
140	0,08508−	+321	+ 22	0,08530+	+333	+ 13
141	08829−	316	34	08863−	327	23
142	09145+	312	45	09190+	323	36
143	09457+	307	56	09513+	318	47
144	09764+	302	67	09831+	313	58
145	0,10066	+296	+ 78	0,10144	+307	+ 69
146	10362+	291	89	10451	301	80
147	10653	285	99	10752+	296	91
148	10938	279	110	11048−	289	101
149	11217	273	120	11337−	283	112
150	0,11490−	+266	+130	0,11620−	+276	+122
151	11756−	259	140	11896−	269	132
152	12015	253	150	12165	262	142
153	12268−	245	159	12427	255	152
154	12513+	238	169	12682−	247	162
155	0,12751+	+231	+178	0,12929	+240	+172
156	12982	223	187	13169−	231	180
157	13205	215	195	13400	224	190
158	13420	207	204	13624−	215	198
159	13627	199	212	13839−	206	206
160	0,13826−	+190	+219	0,14045	+198	+215
161	14016	181	227	14243	189	222
162	14197+	173	235	14432−	179	229
163	14370+	164	241	14611+	171	237
164	14534	155	248	14782−	161	243
165	0,14689	+145	+254	0,14943−	+151	+250
166	14834+	136	260	15094	142	256
167	14970+	127	266	15236−	131	261
168	15097	117	270	15367	122	267
169	15214−	107	275	15489	111	272
170	0,15321	+ 97	+279	0,15600+	+102	+277
171	15418	87	284	15702−	90	280
172	15505+	78	287	15792+	81	285
173	15583−	67	290	15873−	70	287
174	15650−	57	293	15943−	59	290
175	0,15707−	+ 46	+295	0,16002−	+ 48	+293
176	15753+	37	297	16050+	38	295
177	15790−	25	298	16088	27	297
178	15815+	16	300	16115	16	298
179	15831	+ 5	300	16131+	+ 6	299
180	0,15836+	− 5	+301	0,16137	− 6	+298

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	$e = 0{,}46$			$e = 0{,}47$		
v	M	D	D'	M	D	D'
°	°	°	°	°	°	°
0	0,000	+0,328	−0,000	0,000	+0,318	−0,000
1	0,328+	329	010	0,318+	319	010
2	0,657	329	020	0,637−	318	020
3	0,986−	328	031	0,955	319	030
4	1,314+	329	040	1,274−	318	040
5	1,643+	+0,330	−0,051	1,592+	+0,320	−0,050
6	1,973−	329	061	1,912−	319	060
7	2,302+	331	071	2,231+	320	070
8	2,633−	330	082	2,551+	321	080
9	2,963+	332	091	2,872−	321	091
10	3,295−	+0,332	−0,102	3,193−	+0,321	−0,101
11	3,627−	332	113	3,514+	323	110
12	3,959	333	122	3,837	323	121
13	4,292+	335	132	4,160	324	131
14	4,627−	335	143	4,484	325	141
15	4,962	+0,336	−0,153	4,809−	+0,325	−0,151
16	5,298	337	164	5,134+	327	160
17	5,635	338	174	5,461+	328	171
18	5,973	340	184	5,789	329	181
19	6,313−	340	195	6,118	330	191
20	6,653	+0,342	−0,205	6,448+	+0,332	−0,201
21	6,995	343	215	6,780	333	212
22	7,338+	345	225	7,113	334	222
23	7,683	346	236	7,447	336	232
24	8,029+	348	246	7,783	337	242
25	8,377+	+0,350	−0,257	8,120+	+0,339	−0,253
26	8,727	351	268	8,459+	341	263
27	9,078	353	278	8,800	343	274
28	9,431+	355	288	9,143−	344	285
29	9,786+	357	299	9,487	346	295
30	10,143+	+0,359	−0,310	9,833+	+0,349	−0,305
31	10,502+	361	320	10,182	350	316
32	10,863+	364	331	10,532−	353	326
33	11,227−	365	342	10,885	355	337
34	11,592−	369	352	11,240	357	347
35	11,961−	+0,370	−0,364	11,597+	+0,360	−0,358
36	12,331	373	374	11,957	362	369
37	12,704	376	385	12,319+	365	379
38	13,080	378	396	12,684	368	390
39	13,458+	382	406	13,052−	370	401
40	13,840−	+0,384	−0,418	13,422	+0,373	−0,412
41	14,224	387	429	13,795+	377	422
42	14,611+	391	439	14,172−	379	434
43	15,002−	393	451	14,551−	382	445
44	15,395	397	462	14,933+	386	455
45	15,792	+0,400	−0,473	15,319	+0,389	−0,467

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	$e = 0{,}46$			$e = 0{,}47$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
0°	$\bar{1}$,73239+	+ 2	−811	$\bar{1}$,72428−	+ 2	−828
1	73241+	7	811	72430−	6	828
2	73248−	10	812	72436	11	827
3	73258	15	811	72447−	14	827
4	73273−	18	812	72461+	19	826
5	$\bar{1}$,73291+	+ 23	−811	$\bar{1}$,72480+	+ 24	−826
6	73314+	27	810	72504−	27	826
7	73341+	32	810	72531	32	826
8	73373−	35	810	72563	36	825
9	73408	40	809	72599	40	825
10	$\bar{1}$,73448−	+ 44	−809	$\bar{1}$,72639	+ 44	−824
11	73492−	47	809	72683+	49	823
12	73539+	53	807	72732	53	823
13	73592−	56	807	72785	57	822
14	73648−	60	806	72842	61	821
15	$\bar{1}$,73708	+ 65	−805	$\bar{1}$,72903+	+ 66	−820
16	73773−	68	804	72969	70	820
17	73841+	73	802	73039−	74	819
18	73914+	77	801	73113−	78	818
19	73991+	82	800	73191−	82	816
20	$\bar{1}$,74073−	+ 85	−800	$\bar{1}$,73273	+ 87	−815
21	74158	89	798	73360−	91	814
22	74247+	94	796	73451−	95	813
23	74341	98	795	73546−	99	811
24	74439−	102	794	73645	103	809
25	$\bar{1}$,74541−	+106	−793	$\bar{1}$,73748+	+108	−807
26	74647−	110	791	73856	112	806
27	74757	114	789	73968	116	805
28	74871+	119	787	74084	120	803
29	74990	122	786	74204+	125	801
30	$\bar{1}$,75112+	+127	−783	$\bar{1}$,74329	+129	−799
31	75239	131	781	74458−	132	798
32	75370	135	780	74590+	138	795
33	75505	139	777	74728−	141	794
34	75644	143	775	74869	145	791
35	$\bar{1}$,75787+	+148	−773	$\bar{1}$,75014+	+150	−789
36	75935−	151	771	75164	154	787
37	76086	156	768	75318−	158	785
38	76242−	159	766	75476−	162	782
39	76401	164	763	75638	166	779
40	$\bar{1}$,76565−	+168	−761	$\bar{1}$,75804	+171	−777
41	76733−	171	758	75975−	174	774
42	76904+	176	755	76149	179	771
43	77080+	180	752	76328	183	769
44	77260+	184	749	76511−	187	766
45	$\bar{1}$,77444+	+188	−746	$\bar{1}$,76698	+191	−763

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	$e = 0{,}46$			$e = 0{,}47$		
v	M	D	D'	M	D	D'
45°	15°,792	+0°,400	−0°,473	15°,319	+0°,389	−0°,467
46	16,192+	404	484	15,708	393	478
47	16,596	408	495	16,101−	396	489
48	17,004−	411	507	16,497	400	500
49	17,415−	415	518	16,897−	403	512
50	17,830	+0,418	−0,530	17,300+	+0,408	−0,522
51	18,248	424	540	17,708	412	534
52	18,672	427	552	18,120−	415	546
53	19,099	432	564	18,535+	420	556
54	19,531−	436	576	18,955+	425	568
55	19,967−	+0,440	−0,587	19,380−	+0,429	−0,580
56	20,407+	446	598	19,809−	433	592
57	20,853−	450	611	20,242	439	603
58	21,303−	455	622	20,681−	443	615
59	21,758−	460	634	21,124−	448	626
60	22,218−	+0,465	−0,646	21,572	+0,454	−0,638
61	22,683	471	657	22,026−	458	650
62	23,154	476	670	22,484+	465	661
63	23,630	482	681	22,949−	470	674
64	24,112	488	693	23,419−	475	686
65	24,600−	+0,493	−0,706	23,894+	+0,482	−0,697
66	25,093+	500	717	24,376	488	710
67	25,593+	506	729	24,864−	494	722
68	26,099+	513	741	25,358−	500	734
69	26,612	519	754	25,858	507	746
70	27,131+	+0,526	−0,766	26,365+	+0,514	−0,758
71	27,657+	533	778	26,879	521	770
72	28,190+	541	790	27,400	528	783
73	28,731−	547	803	27,928−	535	795
74	29,278+	555	815	28,463	543	807
75	29,833+	+0,563	−0,827	29,006−	+0,550	−0,820
76	30,396+	571	840	29,556+	559	832
77	30,967+	579	852	30,115−	566	845
78	31,546+	588	865	30,681+	575	857
79	32,134−	596	878	31,256+	584	870
80	32,730−	+0,604	−0,890	31,840−	+0,592	−0,883
81	33,334+	614	902	32,432	601	895
82	33,948	623	915	33,033	611	907
83	34,571	633	927	33,644−	620	921
84	35,204−	642	940	34,264−	629	933
85	35,846−	+0,652	−0,953	34,893+	+0,640	−0,945
86	36,498	662	965	35,533	650	958
87	37,160	673	977	36,183	660	971
88	37,833	683	0,990	36,843	671	983
89	38,516+	695	1,002	37,514+	682	0,996
90	39,211	+0,706	−1,015	38,196+	+0,694	−1,008

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	$e = 0{,}46$			$e = 0{,}47$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}77444+$	+188	−746	$\bar{1}{,}76698$	+191	−763
46	77632+	192	743	76889	195	760
47	77824+	197	740	77084	200	756
48	78021−	200	737	77284−	203	754
49	78221−	204	734	77487	208	750
50	$\bar{1}{,}78425$	+208	−730	$\bar{1}{,}77695-$	+211	−747
51	78633	212	727	77906	216	743
52	78845	216	723	78122	220	740
53	79061	220	719	78342−	223	736
54	79281+	224	716	78565+	228	732
55	$\bar{1}{,}79505+$	+228	−712	$\bar{1}{,}78793+$	+232	−728
56	79733+	232	708	79025	236	725
57	79965	236	704	79261	240	721
58	80201	240	700	79501	244	717
59	80441−	243	696	79745	248	713
60	$\bar{1}{,}80684$	+248	−691	$\bar{1}{,}79993-$	+251	−709
61	80932−	251	688	80244+	256	704
62	81183	255	683	80500	260	699
63	81438	259	678	80760	263	695
64	81697	263	674	81023+	268	690
65	$\bar{1}{,}81960-$	+266	−669	$\bar{1}{,}81291-$	+271	−686
66	82226	270	664	81562	275	681
67	82496	274	659	81837+	279	676
68	82770	278	654	82116+	283	671
69	83048−	281	649	82399	287	666
70	$\bar{1}{,}83329$	+285	−643	$\bar{1}{,}82686-$	+290	−661
71	83614	288	638	82976−	294	656
72	83902+	293	632	83270−	297	650
73	84195−	295	628	83567+	302	644
74	84490+	299	621	83869	305	639
75	$\bar{1}{,}84789+$	+303	−615	$\bar{1}{,}84174$	+308	−633
76	85092	306	610	84482+	313	627
77	85398+	310	603	84795−	315	622
78	85708	313	598	85110+	319	615
79	86021	316	592	85429+	323	608
80	$\bar{1}{,}86337$	+320	−585	$\bar{1}{,}85752$	+326	−602
81	86657	323	579	86078	330	596
82	86980−	326	572	86408−	332	590
83	87306−	329	566	86740+	336	582
84	87635	332	559	87076+	340	576
85	$\bar{1}{,}87967+$	+336	−551	$\bar{1}{,}87416-$	+342	−569
86	88303	338	545	87758+	346	562
87	88641+	342	537	88104	349	555
88	88983	344	530	88453−	352	548
89	89327+	348	522	88805−	354	541
90	$\bar{1}{,}89675-$	+350	−516	$\bar{1}{,}89159+$	+358	−532

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	e = 0,46			e = 0,47		
v	M	D	D'	M	D	D'
90°	39°,211	+0°,706	−1°,015	38°,196+	+0°,694	−1°,008
91	39,917−	717	027	38,890−	705	021
92	40,634−	729	039	39,595−	716	034
93	41,363−	741	052	40,311+	729	045
94	42,104	753	064	41,040+	742	058
95	42,857+	+0,766	−1,075	41,782−	+0,754	−1,071
96	43,623+	779	087	42,536	767	083
97	44,402+	793	099	43,303	781	095
98	45,195	806	111	44,084−	794	108
99	46,001−	820	123	44,878−	808	119
100	46,821−	+0,834	−1,135	45,686	+0,823	−1,131
101	47,655−	848	146	46,509−	837	143
102	48,503	864	157	47,346	852	155
103	49,367−	878	169	48,198	868	166
104	50,245	894	179	49,066−	883	177
105	51,139+	+0,910	−1,190	49,949	+0,900	−1,188
106	52,049+	927	200	50,849−	915	200
107	52,976−	942	212	51,764+	933	210
108	53,918+	960	221	52,697	950	221
109	54,878+	977	231	53,647	967	230
110	55,855+	+0,995	−1,241	54,614+	+0,986	−1,241
111	56,850	1,013	250	55,600	1,004	251
112	57,863−	031	259	56,604−	022	261
113	58,894	050	268	57,626	041	270
114	59,944−	069	277	58,667+	061	278
115	61,013−	+1,088	−1,285	59,728+	+1,081	−1,287
116	62,101	109	292	60,809+	101	295
117	63,210−	128	300	61,910+	122	303
118	64,338	149	306	63,032	143	310
119	65,487	170	312	64,175	164	317
120	66,657+	+1,192	−1,318	65,339	+1,186	−1,323
121	67,849−	213	324	66,525+	208	329
122	69,062	235	329	67,733+	231	335
123	70,297	257	333	68,964+	254	340
124	71,554+	281	336	70,218	277	344
125	72,835−	+1,303	−1,340	71,495+	+1,301	−1,348
126	74,138	327	342	72,796+	325	351
127	75,465	350	344	74,121+	350	353
128	76,815+	375	344	75,471−	374	355
129	78,190	399	345	76,845	399	356
130	79,589	+1,423	−1,345	78,244	+1,425	−1,356
131	81,012+	449	343	79,669−	450	356
132	82,461	474	342	81,119+	477	354
133	83,935−	499	339	82,596	502	353
134	85,434−	524	336	84,098+	530	349
135	86,958+	+1,551	−1,330	85,628−	+1,556	−1,345

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	$e = 0{,}46$			$e = 0{,}47$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}89675-$	+350	−516	$\bar{1}{,}89159+$	+358	−532
91	90025−	353	508	89517	361	525
92	90378−	355	500	89878−	363	518
93	90733	358	492	90241	366	510
94	91091	361	484	90607	369	501
95	$\bar{1}{,}91452-$	+363	−476	$\bar{1}{,}90976-$	+371	−493
96	91815−	365	468	91347	374	485
97	92180+	368	459	91721	376	477
98	92548	370	451	92097+	379	468
99	92918	372	442	92476	381	459
100	$\bar{1}{,}93290$	+374	−433	$\bar{1}{,}92857$	+383	−451
101	93664+	376	424	93240	385	442
102	94040+	379	415	93625	387	432
103	94419−	379	407	94012+	389	423
104	94798+	382	397	94401+	391	414
105	$\bar{1}{,}95180$	+383	−388	$\bar{1}{,}94792+$	+393	−404
106	95563	385	378	95185	394	395
107	95948−	385	369	95579	396	385
108	96333+	388	358	95975	397	376
109	96721−	388	349	96372	398	366
110	$\bar{1}{,}97109$	+389	−339	$\bar{1}{,}96770$	+400	−355
111	97498	390	328	97170−	400	346
112	97888+	391	318	97570	401	335
113	98279+	392	308	97971+	402	324
114	98671	392	298	98373+	403	313
115	$\bar{1}{,}99063$	+392	−287	$\bar{1}{,}98776$	+403	−303
116	99455+	393	276	99179	404	292
117	$\bar{1}{,}99848$	393	265	99583−	403	282
118	0,00241−	392	255	$\bar{1}{,}99986$	404	270
119	00633+	393	243	0,00390−	403	260
120	0,01026−	+392	−233	0,00793	+403	−248
121	01418−	391	222	01196+	403	236
122	01809	390	210	01599	402	225
123	02199+	390	198	02001	401	214
124	02589	389	187	02402	400	202
125	0,02978−	+387	−176	0,02802	+399	−190
126	03365	386	164	03201	397	179
127	03751	384	153	03598+	396	166
128	04135	382	141	03994+	395	155
129	04517+	381	128	04389−	392	143
130	0,04898	+378	−117	0,04781−	+390	−131
131	05276	376	105	05171−	387	119
132	05652−	372	94	05558	385	107
133	06024+	371	81	05943	382	95
134	06395−	367	70	06325	379	83
135	0,06762−	+363	− 58	0,06704−	+375	−71

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	e = 0,46			e = 0,47		
v	M	D	D'	M	D	D'
135°	86°,958+	+1°,551	−1°,330	85°,628−	+1°,556	−1°,345
136	88,509	577	325	87,184	583	340
137	90,086−	603	319	88,767	610	334
138	91,689−	629	312	90,377+	638	327
139	93,318	656	303	92,015+	666	319
140	94,974−	+1,682	−1,293	93,681−	+1,693	−1,311
141	96,656	709	282	95,374−	720	301
142	98,365	736	271	97,094+	749	289
143	100,101	762	258	98,843	776	277
144	101,863+	790	244	100,619+	805	263
145	103,653−	+1,815	−1,229	102,424−	+1,832	−1,249
146	105,468+	843	212	104,256−	859	233
147	107,311	869	196	106,115+	888	215
148	109,180−	895	177	108,003	915	197
149	111,075−	921	157	109,918	942	177
150	112,996−	+1,947	−1,136	111,860	+1,969	−1,156
151	114,943−	972	114	113,829+	1,997	133
152	116,915	1,998	089	115,826−	2,022	110
153	118,913−	2,022	065	117,848	049	085
154	120,935	047	038	119,897−	074	059
155	122,982	+2,071	−1,011	121,971	+2,099	−1,031
156	125,053−	094	0,983	124,070+	125	1,002
157	127,147	117	952	126,195−	148	0,973
158	129,264	140	921	128,343	172	941
159	131,404−	161	889	130,515−	194	908
160	133,565−	+2,182	−0,856	132,709+	+2,217	−0,874
161	135,747	202	821	134,926+	239	839
162	137,949+	222	784	137,165−	258	803
163	140,171+	241	748	139,423+	279	765
164	142,412	259	710	141,702	298	726
165	144,671−	+2,275	−0,671	144,000−	+2,315	−0,687
166	146,946	292	631	146,315	332	646
167	149,238−	306	591	148,647+	349	604
168	151,544	321	548	150,996−	363	562
169	153,865−	333	506	153,359	377	518
170	156,198+	+2,346	−0,462	155,736	+2,390	−0,474
171	158,544−	356	418	158,126−	401	429
172	160,900	366	373	160,527−	411	383
173	163,266	375	328	162,938	421	336
174	165,641−	382	282	165,359−	428	290
175	168,023−	+2,388	−0,236	167,787−	+2,434	−0,242
176	170,411−	393	190	170,221+	441	193
177	172,804−	396	142	172,662−	443	146
178	175,200+	400	095	175,105+	447	097
179	177,600−	400	048	177,552	448	049
180	180,000	+2,400	−0,000	180,000	+2,448	−0,000

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	$e = 0{,}46$			$e = 0{,}47$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,06762 −	+363	− 58	0,06704 −	+375	− 71
136	07125 +	361	46	07079 +	372	58
137	07486 −	356	35	07451 +	369	46
138	07842	352	22	07820 −	364	34
139	08194 +	349	− 10	08184	360	22
140	0,08543 −	+343	+ 1	0,08544	+356	− 10
141	08886 +	340	14	08900 −	350	+ 2
142	09226 −	334	24	09250 +	346	15
143	09560	329	36	09596 +	341	26
144	09889	324	48	09937	335	38
145	0,10213 −	+318	+ 59	0,10272	+329	+ 49
146	10531 −	312	70	10601 +	324	61
147	10843	306	82	10925 −	317	72
148	11149	300	93	11242 −	310	84
149	11449 −	293	103	11552 +	304	95
150	0,11742	+286	+114	0,11856 +	+297	+106
151	12028 +	279	125	12153	290	117
152	12307 +	272	136	12443 −	282	127
153	12579 +	265	146	12725 −	274	138
154	12844	257	155	12999	266	148
155	0,13101 −	+248	+164	0,13265 +	+259	+159
156	13349	241	175	13524 −	249	168
157	13590 −	232	183	13773 +	241	178
158	13822 −	223	192	14014 +	232	187
159	14045	215	201	14246 +	223	196
160	0,14260 −	+205	+209	0,14469	+214	+204
161	14465	196	218	14683 −	204	212
162	14661 +	187	226	14887 −	194	220
163	14848	177	233	15081 −	184	228
164	15025 +	168	240	15265	174	235
165	0,15193 −	+157	+246	0,15439	+164	+242
166	15350	147	253	15603 −	153	248
167	15497 +	137	259	15756 −	142	255
168	15634 +	127	264	15898	132	261
169	15761	116	269	16030	121	266
170	0,15877	+105	+274	0,16151 −	+109	+270
171	15982	95	278	16260	99	275
172	16077 −	83	282	16359 −	87	279
173	16160 +	73	286	16446 −	75	282
174	16233	62	288	16521 +	64	286
175	0,16295 −	+ 50	+290	0,16585 +	+ 53	+289
176	16345 +	40	293	16638	41	291
177	16385 −	28	294	16679	29	292
178	16413 −	17	295	16708 +	18	294
179	16430 −	+ 5	296	16726	+ 6	294
180	0,16435 +	− 5	+297	0,16732 −	− 6	+294

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	$e = 0{,}48$			$e = 0{,}49$		
v	M	D	D'	M	D	D'
0°	0°,000	+0°,308	−0°,000	0°,000	+0°,298	−0°,000
1	0,308+	309	010	0,298+	298	009
2	0,617−	308	021	0,596	299	019
3	0,925	309	030	0,895+	299	029
4	1,234−	308	040	1,194	299	039
5	1,542+	+0,310	−0,049	1,493	+0,299	−0,048
6	1,852−	309	060	1,792+	300	058
7	2,161	310	069	2,092	300	068
8	2,471	310	079	2,392	301	078
9	2,781+	311	088	2,693−	301	088
10	3,092+	+0,312	−0,098	2,994−	+0,301	−0,097
11	3,404	312	109	3,295+	303	107
12	3,716+	313	118	3,598−	303	117
13	4,029+	314	128	3,901	304	127
14	4,343+	315	138	4,205−	304	137
15	4,658−	+0,316	−0,149	4,509+	+0,306	−0,146
16	4,974−	316	159	4,815	307	156
17	5,290+	318	168	5,122−	307	166
18	5,608	319	179	5,429+	309	175
19	5,927−	320	189	5,738	310	185
20	6,247−	+0,321	−0,199	6,048	+0,311	−0,195
21	6,568	323	209	6,359+	313	205
22	6,891−	324	219	6,672	314	216
23	7,215−	326	229	6,986−	315	226
24	7,541+	326	240	7,301	317	235
25	7,867+	+0,329	−0,249	7,618	+0,318	−0,246
26	8,196	330	260	7,936+	321	255
27	8,526+	332	269	8,257−	321	266
28	8,858+	334	280	8,578+	324	275
29	9,192+	336	290	8,902	326	286
30	9,528+	+0,338	−0,300	9,228−	+0,327	−0,297
31	9,866	340	311	9,555	330	306
32	10,206	342	321	9,885−	331	317
33	10,548+	345	332	10,216+	334	327
34	10,893−	346	343	10,550	336	337
35	11,239+	+0,349	−0,353	10,886+	+0,339	−0,347
36	11,588+	352	363	11,225	341	358
37	11,940	354	374	11,566−	343	369
38	12,294	357	385	11,909+	346	379
39	12,651−	359	396	12,255+	349	389
40	13,010	+0,363	−0,406	12,604	+0,352	−0,400
41	13,373−	365	417	12,956−	354	411
42	13,738	368	428	13,310+	358	421
43	14,106	372	438	13,668−	360	433
44	14,478−	374	450	14,028+	364	443
45	14,852+	+0,378	−0,460	14,392	+0,367	−0,454

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	$e = 0{,}48$			$e = 0{,}49$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
0°	$\bar{1}$,71600+	+ 2	−843	$\bar{1}$,70757	+ 2	−860
1	71602+	7	843	70759+	7	860
2	71609	11	843	70766−	11	860
3	71620−	15	843	70777−	15	860
4	71635−	19	843	70792	19	860
5	$\bar{1}$,71654	+ 24	−843	$\bar{1}$,70811+	+ 24	−859
6	71678−	27	843	70835+	29	859
7	71705+	33	841	70864−	32	859
8	71738−	36	842	70896+	37	858
9	71774	41	841	70933+	42	857
10	$\bar{1}$,71815	+ 45	−840	$\bar{1}$,70975−	+ 45	−858
11	71860	49	840	71020+	50	856
12	71909+	54	839	71070+	55	856
13	71963	58	838	71125−	58	855
14	72021−	62	838	71183+	63	854
15	$\bar{1}$,72083	+ 66	−837	$\bar{1}$,71246+	+ 68	−853
16	72149+	71	835	71314	72	853
17	72220+	75	834	71386−	76	852
18	72295+	80	833	71462−	80	851
19	72375−	83	833	71542+	85	849
20	$\bar{1}$,72458+	+ 88	−831	$\bar{1}$,71627	+ 89	−848
21	72546	92	830	71716	94	847
22	72638+	97	828	71810−	97	846
23	72735−	101	828	71907+	103	844
24	72836−	105	826	72010−	106	843
25	$\bar{1}$,72941−	+109	−825	$\bar{1}$,72116	+111	−841
26	73050	113	823	72227	115	840
27	73163+	118	821	72342+	120	838
28	73281	122	819	72462−	124	837
29	73403+	127	817	72586−	128	835
30	$\bar{1}$,73530−	+130	−816	$\bar{1}$,72714	+132	−833
31	73660+	135	814	72846+	137	830
32	73795	139	812	72983+	142	829
33	73934+	144	809	73125−	145	827
34	74078−	147	808	73270	150	825
35	$\bar{1}$,74225+	+152	−805	$\bar{1}$,73420	+154	−823
36	74377+	156	803	73574	159	820
37	74533+	161	800	73733−	162	819
38	74694	165	799	73895+	168	815
39	74859−	168	796	74063−	171	814
40	$\bar{1}$,75027+	+174	−793	$\bar{1}$,74234	+176	−811
41	75201−	177	791	74410−	180	808
42	75378	181	788	74590−	184	806
43	75559+	186	785	74774	189	803
44	75745	190	782	74963	193	800
45	$\bar{1}$,75935	+194	−779	$\bar{1}$,75156−	+197	−797

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	$e = 0,48$			$e = 0,49$		
v	M	D	D'	M	D	D'
45°	14°,852+	+0°,378	−0°,460	14°,392	+0°,367	−0°,454
46	15,230+	382	471	14,759	370	465
47	15,612−	385	483	15,129+	374	475
48	15,997−	388	494	15,503+	378	486
49	16,385+	393	504	15,881	381	498
50	16,778−	+0,396	−0,516	16,262	+0,385	−0,509
51	17,174	400	527	16,647	389	520
52	17,574+	405	538	17,036	393	531
53	17,979−	408	550	17,429	397	542
54	18,387	413	561	17,826+	402	553
55	18,800	+0,417	−0,572	18,228−	+0,406	−0,565
56	19,217+	422	583	18,634−	410	577
57	19,639+	427	595	19,044	415	588
58	20,066	432	607	19,459	420	599
59	20,498−	436	619	19,879	425	611
60	20,934	+0,442	−0,630	20,304	+0,430	−0,623
61	21,376−	447	642	20,734−	435	635
62	21,823−	452	654	21,169	440	646
63	22,275	458	666	21,609+	446	657
64	22,733	464	678	22,055+	452	669
65	23,197	+0,469	−0,690	22,507+	+0,458	−0,681
66	23,666+	476	701	22,965−	463	694
67	24,142	482	714	23,428+	470	705
68	24,624	488	726	23,898	476	718
69	25,112+	495	738	24,374	483	730
70	25,607	+0,502	−0,750	24,857−	+0,489	−0,742
71	26,109−	508	763	25,346	496	754
72	26,617	516	775	25,842+	503	767
73	27,133−	523	788	26,345+	511	779
74	27,656−	530	800	26,856	518	792
75	28,186	+0,538	−0,812	27,374	+0,525	−0,804
76	28,724	546	825	27,899+	534	816
77	29,270	554	837	28,433	541	829
78	29,824	562	850	28,974+	550	842
79	30,386+	571	862	29,524	558	854
80	30,957+	+0,580	−0,875	30,082+	+0,567	−0,867
81	31,537	589	888	30,649+	576	880
82	32,126−	597	901	31,225+	586	892
83	32,723+	608	912	31,811−	594	906
84	33,331	617	926	32,405	605	918
85	33,948	+0,627	−0,938	33,010−	+0,614	−0,932
86	34,575	637	951	33,624	624	944
87	35,212+	648	964	34,248+	635	957
88	35,860	658	977	34,883+	646	970
89	36,518+	670	0,989	35,529	657	983
90	37,188	+0,681	−1,002	36,186	+0,668	−0,996

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	$e = 0{,}48$			$e = 0{,}49$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
45°	$\bar{1}{,}75935$	+194	−779	$\bar{1}{,}75156-$	+197	−797
46	76129+	199	776	75353−	201	794
47	76328−	202	774	75554+	206	791
48	76530+	207	770	75760	210	788
49	76737	211	767	75970	214	785
50	$\bar{1}{,}76948$	+215	−764	$\bar{1}{,}76184+$	+219	−781
51	77163	219	760	76403−	222	778
52	77382	224	757	76625+	227	774
53	77606−	227	754	76852+	232	770
54	77833	232	749	77084−	235	768
55	$\bar{1}{,}78065-$	+235	−746	$\bar{1}{,}77319$	+240	−764
56	78300+	240	741	77559−	243	760
57	78540+	244	738	77802+	248	755
58	78784+	248	734	78050+	252	752
59	79032+	252	730	78302+	257	747
60	$\bar{1}{,}79284+$	+256	−725	$\bar{1}{,}78559-$	+260	−744
61	79540+	261	721	78819	265	739
62	79801−	264	717	79084−	268	735
63	80065	268	713	79352+	273	730
64	80333	272	708	79625	277	726
65	$\bar{1}{,}80605$	+276	−703	$\bar{1}{,}79902$	+281	−721
66	80881+	280	698	80183	285	717
67	81161+	284	693	80468−	289	712
68	81445+	288	688	80757−	293	707
69	81733	292	683	81050−	297	702
70	$\bar{1}{,}82025$	+295	−678	$\bar{1}{,}81347-$	+300	−697
71	82320+	300	673	81647+	305	691
72	82620	303	668	81952+	309	686
73	82923	307	662	82261	313	680
74	83230	311	656	82574−	316	675
75	$\bar{1}{,}83541$	+314	−651	$\bar{1}{,}82890$	+320	−669
76	83855+	318	645	83210+	325	663
77	84173+	322	638	83535−	327	658
78	84495+	326	633	83862+	332	651
79	84821−	329	627	84194	335	645
80	$\bar{1}{,}85150-$	+332	−621	$\bar{1}{,}84529$	+339	−639
81	85482	336	614	84868	343	632
82	85818	340	607	85211−	346	626
83	86158−	342	601	85557−	349	620
84	86500+	347	594	85906+	353	612
85	$\bar{1}{,}86847-$	+349	−588	$\bar{1}{,}86259+$	+357	−605
86	87196	353	580	86616	360	599
87	87549	356	573	86976	363	592
88	87905	359	566	87339+	367	584
89	88264+	363	558	87706	370	577
90	$\bar{1}{,}88627-$	+365	−551	$\bar{1}{,}88076-$	+373	−570

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	$e = 0{,}48$			$e = 0{,}49$		
v	M	D	D'	M	D	D'
90°	37°,188	+0°,681	−1°,002	36°,186	+0°,668	−0°,996
91	37,869	692	015	36,854	680	1,009
92	38,561+	705	027	37,534−	691	022
93	39,266−	716	041	38,225+	704	034
94	39,982	729	053	38,929+	717	047
95	40,711+	+0,742	−1,065	39,646	+0,729	−1,060
96	41,453	755	078	40,375	743	073
97	42,208	768	090	41,118−	756	086
98	42,976+	783	102	41,874−	770	098
99	43,759−	796	115	42,644−	784	111
100	44,555	+0,811	−1,127	43,428	+0,799	−1,123
101	45,366	825	139	44,227−	813	136
102	46,191+	841	151	45,040	829	148
103	47,032+	857	163	45,869	845	160
104	47,889−	872	175	46,714−	860	172
105	48,761−	+0,888	−1,187	47,574+	+0,877	−1,184
106	49,649+	905	198	48,451+	894	195
107	50,554+	922	209	49,345+	912	207
108	51,476+	941	219	50,257−	928	219
109	52,417	956	232	51,185+	947	230
110	53,373+	+0,976	−1,241	52,132+	+0,966	−1,241
111	54,349	0,994	251	53,098−	0,984	252
112	55,343	1,013	261	54,082−	1,003	263
113	56,356+	033	271	55,085	023	272
114	57,389	052	281	56,108+	044	282
115	58,441+	+1,073	−1,289	57,152	+1,064	−1,292
116	59,514	093	298	58,216−	085	302
117	60,607+	115	306	59,301−	106	310
118	61,722	136	315	60,407+	129	318
119	62,858−	158	322	61,536−	150	327
120	64,016−	+1,180	−1,330	62,686+	+1,174	−1,334
121	65,196−	202	336	63,860	197	341
122	66,398+	226	341	65,057	220	348
123	67,624+	250	347	66,277+	245	354
124	68,874	273	352	67,522	269	360
125	70,147+	+1,298	−1,356	68,791	+1,294	−1,365
126	71,445+	323	360	70,085	320	369
127	72,768	348	363	71,405−	345	373
128	74,116−	373	366	72,750	372	376
129	75,489−	399	367	74,122−	398	379
130	76,888−	+1,425	−1,368	75,520	+1,425	−1,380
131	78,313	452	368	76,945	452	381
132	79,765−	478	368	78,397+	481	380
133	81,243+	506	365	79,878−	508	380
134	82,749+	534	363	81,386	537	378
135	84,283−	+1,561	−1,360	82,923−	+1,565	−1,375

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	$e = 0{,}48$			$e = 0{,}49$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
90°	$\bar{1}{,}88627-$	+365	−551	1,88076−	+373	−570
91	88992	368	543	88449−	376	562
92	89360	371	535	88825−	379	554
93	89731+	375	527	89204	382	546
94	90106−	377	520	89586	385	538
95	$\bar{1}{,}90483+$	+379	−512	$\bar{1}{,}89971$	+388	−530
96	90862	382	503	90359	391	522
97	91244+	385	494	90750−	393	513
98	91629	388	486	91143	396	504
99	92017−	389	478	91539	399	496
100	$\bar{1}{,}92406+$	+392	−468	$\bar{1}{,}91938-$	+401	−487
101	92798+	395	459	92339−	403	478
102	93193−	396	451	92742	406	469
103	93589	398	441	93148−	407	460
104	93987+	401	432	93555+	410	450
105	$\bar{1}{,}94388-$	+402	−423	$\bar{1}{,}93965+$	+412	−440
106	94790	404	413	94377	414	431
107	95194−	405	403	94791	415	421
108	95599+	407	393	95206+	417	411
109	96006+	409	383	95623+	419	401
110	$\bar{1}{,}96415-$	+409	−373	$\bar{1}{,}96042$	+420	−391
111	96824+	411	362	96462	421	380
112	97235	412	352	96883	422	370
113	97647	413	342	97305+	424	359
114	98060−	413	331	97729−	424	349
115	$\bar{1}{,}98473$	+414	−320	$\bar{1}{,}98153$	+425	−338
116	98887	414	309	98578−	425	327
117	99301	415	298	99003	426	315
118	$\bar{1}{,}99716$	414	287	99429	426	304
119	0,00130+	415	275	$\bar{1}{,}99855$	426	293
120	0,00545	+415	−264	0,00281	+426	−281
121	00960−	414	253	00707	426	269
122	01374−	413	241	01133−	425	258
123	01787	413	229	01558−	424	246
124	02200	412	218	01982+	424	233
125	0,02612−	+410	−206	0,02406	+423	−222
126	03022+	410	193	02829−	421	210
127	03432−	407	182	03250	420	197
128	03839+	407	169	03670	418	185
129	04246	404	158	04088	416	172
130	0,04650−	+402	−146	0,04504+	+415	−160
131	05052−	399	133	04919−	412	148
132	05451+	397	120	05331−	409	135
133	05848	394	108	05740	406	122
134	06242+	391	96	06146+	404	109
135	0,06633+	+388	−83	0,06550	+400	−97

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	$e = 0{,}48$			$e = 0{,}49$		
v	M	D	D'	M	D	D'
135°	84°,283 −	+1°,561	−1°,360	82°,923 −	+1°,565	−1°,375
136	85,844 −	589	356	84,488	595	371
137	87,433	617	350	86,083 −	623	367
138	89,050	646	344	87,706 +	653	360
139	90,696	674	337	89,359 +	683	353
140	92,370	+1,703	−1,328	91,042 +	+1,713	−1,346
141	94,073 +	732	318	92,755	743	337
142	95,805 +	761	307	94,498 −	773	327
143	97,566 +	790	295	96,271 −	803	315
144	99,356 +	819	282	98,074	833	302
145	101,175 +	+1,848	−1,268	99,907 +	+1,864	−1,288
146	103,023 +	877	252	101,771	894	273
147	104,900 +	906	235	103,665	924	256
148	106,806 +	935	217	105,589	954	238
149	108,741	963	198	107,543 +	1,985	219
150	110,704 +	+1,992	−1,176	109,528 −	+2,013	−1,199
151	112,696	2,020	155	111,541 +	044	176
152	114,716 −	047	131	113,585 −	072	153
153	116,763	075	106	115,657	101	128
154	118,838	102	080	117,758 +	130	101
155	120,940 −	+2,128	−1,052	119,888 −	+2,157	−1,074
156	123,068	154	1,023	122,045	185	044
157	125,222 +	180	0,992	124,230	211	1,014
158	127,402	205	961	126,441 +	238	0,982
159	129,607 −	228	928	128,679	263	949
160	131,835 +	+2,252	−0,893	130,942	+2,288	−0,914
161	134,087 +	275	857	133,230 −	311	878
162	136,362	296	821	135,541	335	840
163	138,658 +	318	782	137,876 −	356	802
164	140,976 −	337	744	140,232	378	761
165	143,313	+2,356	−0,703	142,610	+2,398	−0,720
166	145,669	374	661	145,008 −	416	678
167	148,043 +	391	619	147,424 +	435	634
168	150,434 +	407	575	149,859	451	590
169	152,841	421	531	152,310	467	544
170	155,262 +	+2,435	−0,485	154,777	+2,481	−0,498
171	157,697	447	439	157,258	494	451
172	160,144	458	392	159,752 −	505	403
173	162,602	467	345	162,257	516	354
174	165,069 +	476	296	164,773 −	524	305
175	167,545	+2,483	−0,248	167,297	+2,532	−0,255
176	170,028 −	488	199	169,829 −	537	204
177	172,516 −	492	150	172,366 +	542	153
178	175,008	495	100	174,908 +	545	102
179	177,503 +	497	050	177,453 +	547	051
180	180,000	+2,497	−0,000	180,000	+2,547	−0,000

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	$e = 0{,}48$			$e = 0{,}49$		
v	$\log \frac{r}{a}$	D	D'	$\log \frac{r}{a}$	D	D'
135°	0,06633+	+388	− 83	0,06550	+400	− 97
136	07021	384	71	06950	397	84
137	07405+	381	58	07347−	393	72
138	07786	376	46	07740−	388	59
139	08162+	372	34	08128+	385	46
140	0,08534+	+368	− 21	0,08513−	+380	− 34
141	08902	363	− 9	08893−	375	21
142	09265−	357	+ 3	09268−	370	− 9
143	09622+	353	16	09638−	364	+ 4
144	09975−	346	27	10002	359	17
145	0,10321+	+341	+ 40	0,10361	+353	+ 29
146	10662+	335	52	10714−	346	41
147	10997+	329	63	11060+	340	54
148	11326−	321	74	11400+	334	66
149	11647+	315	87	11734−	326	77
150	0,11962+	+308	+ 98	0,12060	+319	+ 89
151	12270	300	109	12379	311	100
152	12570+	293	120	12690	303	112
153	12863	284	130	12993+	296	123
154	13147+	277	142	13289−	286	133
155	0,13424	+268	+151	0,13575+	+278	+145
156	13692−	259	161	13853+	269	155
157	13951	250	171	14122	260	165
158	14201	241	181	14382	250	175
159	14442	231	190	14632	240	184
160	0,14673+	+222	+199	0,14872+	+231	+194
161	14895+	212	208	15103	220	202
162	15107	202	216	15323	210	211
163	15309	191	224	15533−	199	219
164	15500+	181	232	15732−	188	227
165	0,15681+	+170	+239	0,15920−	+177	+234
166	15851+	160	246	16097−	165	241
167	16011−	148	251	16262	154	248
168	16159	137	257	16416+	143	254
169	16296	125	263	16559−	130	259
170	0,16421+	+114	+268	0,16689+	+119	+265
171	16535+	103	273	16808	106	270
172	16638−	90	276	16914+	95	275
173	16728+	79	281	17009−	82	278
174	16807	67	284	17091−	69	281
175	0,16874	+ 55	+286	0,17160	+ 57	+284
176	16929−	42	288	17217	44	286
177	16971+	31	290	17261+	32	289
178	17002−	18	291	17293+	19	290
179	17020	+ 6	292	17312+	+ 7	291
180	0,17026	− 6	+293	0,17319−	− 7	+290

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Table pour la conversion des minutes et secondes en fractions décimales de degré

I.

0°,0	=	0°	0′
0 ,1		0	6
0 ,2		0	12
0 ,3		0	18
0 ,4		0	24
0 ,5	=	0	30
0 ,6		0	36
0 ,7		0	42
0 ,8		0	48
0 ,9		0	54
1 ,0	=	1	0

III.

0°,0000	=	0″	,00
0 ,0001		0	,36
0 ,0002		0	,72
0 ,0003		1	,08
0 ,0004		1	,44
0 ,0005	=	1	,80
0 ,0006		2	,16
0 ,0007		2	,52
0 ,0008		2	,88
0 ,0009		3	,24
0 ,0010	=	3	,60

II.

°		′	″	°		′	″	°		′	″
0,000	=	0	0,0	0,034	=	2	2,4	0,068	=	4	4,8
001		0	3,6	035		2	6,0	069		4	8,4
002		0	7,2	036		2	9,6	070		4	12,0
003		0	10,8	037		2	13,2	071		4	15,6
004		0	14,4	038		2	16,8	072		4	19,2
0,005	=	0	18,0	0,039	=	2	20,4	0,073	=	4	22,8
006		0	21,6	040		2	24,0	074		4	26,4
007		0	25,2	041		2	27,6	075		4	30,0
008		0	28,8	042		2	31,2	076		4	33,6
009		0	32,4	043		2	34,8	077		4	37,2
0,010	=	0	36,0	0,044	=	2	38,4	0,078	=	4	40,8
011		0	39,6	045		2	42,0	079		4	44,4
012		0	43,2	046		2	45,6	080		4	48,0
013		0	46,8	047		2	49,2	081		4	51,6
014		0	50,4	048		2	52,8	082		4	55,2
0,015	=	0	54,0	0,049	=	2	56,4	0,083	=	4	58,8
016		0	57,6	050		3	0,0	084		5	2,4
017		1	1,2	051		3	3,6	085		5	6,0
018		1	4,8	052		3	7,2	086		5	9,6
019		1	8,4	053		3	10,8	087		5	13,2
0,020	=	1	12,0	0,054	=	3	14,4	0,088	=	5	16,8
021		1	15,6	055		3	18,0	089		5	20,4
022		1	19,2	056		3	21,6	090		5	24,0
023		1	22,8	057		3	25,2	091		5	27,6
024		1	26,4	058		3	28,8	092		5	31,2
0,025	=	1	30,0	0,059	=	3	32,4	0,093	=	5	34,8
026		1	33,6	060		3	36,0	094		5	38,4
027		1	37,2	061		3	39,6	095		5	42,0
028		1	40,8	062		3	43,2	096		5	45,6
029		1	44,4	063		3	46,8	097		5	49,2
0,030	=	1	48,0	0,064	=	3	50,4	0,098	=	5	52,8
031		1	51,6	065		3	54,0	099		5	56,4
032		1	55,2	066		3	57,6	100		6	0,0
033		1	58,8	067		4	1,2				
034		2	2,4	068		4	4,8				

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Table d'interpolation pour les différences secondes

$$\varepsilon = \frac{h\,(h-1)}{2}\,d$$

h / d	+0,5	+0,6 +0,4	+0,7 +0,3	+0,8 +0,2	+0,9 +0,1	0,0 +1,0	-0,1 +1,1	-0,2 +1,2	-0,3 +1,3	-0,4 +1,4	-0,5 +1,5
0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2	-0,3	-0,2	-0,2	-0,2	-0,1	0,0	0,1	0,2	0,4	0,6	0,8
4	0,5	0,5	0,4	0,3	0,2	0,0	0,2	0,5	0,8	1,1	1,5
6	0,8	0,7	0,6	0,5	0,3	0,0	0,3	0,7	1,2	1,7	2,3
8	1,0	1,0	0,8	0,6	0,4	0,0	0,4	1,0	1,6	2,2	3,0
10	-1,3	-1,2	-1,1	-0,8	-0,5	0,0	0,6	1,2	2,0	2,8	3,8
12	1,5	1,4	1,3	1,0	0,5	0,0	0,7	1,4	2,3	3,4	4,5
14	1,8	1,7	1,5	1,1	0,6	0,0	0,8	1,7	2,7	3,9	5,3
16	2,0	1,9	1,7	1,3	0,7	0,0	0,9	1,9	3,1	4,5	6,0
18	2,3	2,2	1,9	1,4	0,8	0,0	1,0	2,2	3,5	5,0	6,8
20	-2,5	-2,4	-2,1	-1,6	-0,9	0,0	1,1	2,4	3,9	5,6	7,5
22	2,8	2,6	2,3	1,8	1,0	0,0	1,2	2,6	4,3	6,2	8,3
24	3,0	2,9	2,5	1,9	1,1	0,0	1,3	2,9	4,7	6,7	9,0
26	3,3	3,1	2,7	2,1	1,2	0,0	1,4	3,1	5,1	7,3	9,8
28	3,5	3,4	2,9	2,2	1,3	0,0	1,5	3,4	5,5	7,8	10,5
30	-3,8	-3,6	-3,2	-2,4	-1,4	0,0	1,7	3,6	5,9	8,4	11,3
32	4,0	3,8	3,4	2,6	1,4	0,0	1,8	3,8	6,2	9,0	12,0
34	4,3	4,1	3,6	2,7	1,5	0,0	1,9	4,1	6,6	9,5	12,8
36	4,5	4,3	3,8	2,9	1,6	0,0	2,0	4,3	7,0	10,1	13,5
38	4,8	4,6	4,0	3,0	1,7	0,0	2,1	4,6	7,4	10,6	14,3
40	-5,0	-4,8	-4,2	-3,2	-1,8	0,0	2,2	4,8	7,8	11,2	15,0
42	5,3	5,0	4,4	3,4	1,9	0,0	2,3	5,0	8,2	11,8	15,8
44	5,5	5,3	4,6	3,5	2,0	0,0	2,4	5,3	8,6	12,3	16,5
46	5,8	5,5	4,8	3,7	2,1	0,0	2,5	5,5	9,0	12,9	17,3
48	6,0	5,8	5,0	3,8	2,2	0,0	2,6	5,8	9,4	13,4	18,0
50	-6,3	-6,0	-5,3	-4,0	-2,3	0,0	2,8	6,0	9,8	14,0	18,8
52	6,5	6,2	5,5	4,2	2,3	0,0	2,9	6,2	10,1	14,6	19,5
54	6,8	6,5	5,7	4,3	2,4	0,0	3,0	6,5	10,5	15,1	20,3
56	7,0	6,7	5,9	4,5	2,5	0,0	3,1	6,7	10,9	15,7	21,0
58	7,3	7,0	6,1	4,6	2,6	0,0	3,2	7,0	11,3	16,2	21,8
60	-7,5	-7,2	-6,3	-4,8	-2,7	0,0	3,3	7,2	11,7	16,8	22,5

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